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AMERICAN

RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

ASSISTANT EDITORS:

JAMES T. HODGE, *For Mining and Metallurgy.*
CHARLES T. JAMES, *For Manufactures and the Mechanic Arts.*
M. BUTT HEWSON, *For Civil Engineering.*

SATURDAY, APRIL 20, 1850.

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ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

Room 13, Third Floor,

No. 136 Nassau Street.

FARMERS! ATTENTION!!

John Mayher & Co's

NEW AGRICULTURAL WAREHOUSE AND SEED STORE,

197 WATER STREET, NEW YORK.

Where they have for Sale, the largest and most complete assortment of Farming Implements, ever offered for sale in this city—all of which they will sell 10 per cent. Cheaper than the same kind of Goods can be bought at any other house in the city. Our Goods are all Warranted to give satisfaction.

FARMERS wanting to purchase, will please call and examine our *Stock* before buying elsewhere.

Among our assortment may be found the Celebrated Highest Premium Eagle Ploughs! together with all the most approved Ploughs now in use.

Also,—Horse Powers, Threshing Machines, Fan Mills, Corn Shellers, Straw Cutters, Corn Mills, Seed Sowers, Churns, Ox Yokes, Ox Scrapers, Hay Rakes, Horse Rakes, Patent Chain Pump (that never freezes nor rusts), and other Pumps; in fact we have everything for Farming Purposes—together with Guano, Bone Dust and other Fertilizers.

JOHN MAYHER & CO.,
197 Water st., N. Y.

February 9, 1850.

N.B.—J. M. & Co. also continue their Old Stand, at 195 Front street, near Fulton Market.

STABILITY—SECURITY—PERPETUITY.

Mutual Life Insurance Co. of New York.

No. 35 WALL STREET.

A MILLION OF DOLLARS

Securely invested in Bonds and Mortgages on real estate in this city and Brooklyn, and stocks of the State and City of New York and United States Government.

This fund is rapidly increasing, by a widely extended and prosperous business.

The company declared a dividend of profits of fifty-two per cent. on all existing policies on the 31st of January, 1848.

All the Profits are Divided Among the Insured.

The premiums are payable in Cash annually, semi-annually, or quarterly, interest being added on the deferred payments.

The cash principle adopted by this company secures to the parties for whose benefit the insurances are effected, the whole of the advantages, without subjecting them to the heavy drawback of accumulated premium notes.

Persons may effect insurance on their own lives and the lives of others.

A married woman can insure the life of her husband, the benefits of which are secured by law for the exclusive use of herself or children.

Clergymen and all others dependent upon salaries or their daily earnings are specially invited to avail themselves of a resource whereby their surviving families may be secured from the evils of penury.

Pamphlets explanatory of the principles of Mutual Life Insurance, and illustrating its advantages, with forms of application, may be obtained at the office of the company, 35 Wall street, or of any of its agents.

TRUSTEES.

Jos. B. Collins,	David C. Colden,
Wm. J. Hyslop.	Alfred Edwards,
R. H. McCurdy,	Wm. Betts,
Fred. S. Winston,	Joseph Blunt,
C. W. Faber,	Isaac G. Pearson,
John P. Yelverton,	Henry Wells,
Theo. Sedgwick,	Wm. Moore,
Stacy B. Collins,	Zebedee Cook,
John H. Swift,	Jona. Miller,
John Wadsworth,	David A. Comstock,
S. M. Cornell,	Robert Schuyler,
Gouv. M. Wilkins,	James Chambers,
John V. L. Pruyn,	Joseph Tuckerman,
Fred. Whittlesey,	Moses H. Grinnell,
Charles Ely,	Wm. J. Banker,
John C. Cruger,	Eugene Dutilh,
Walter Joy,	Francis S. Lathrop,
Alfred Pell,	John C. Thatcher.

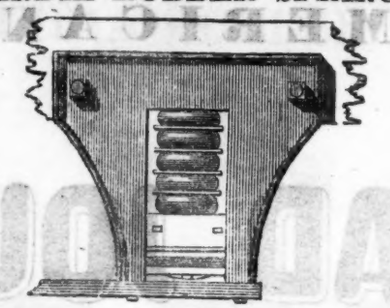
JOSEPH. B. COLLINS, President.
ISAAC ABBATT, Secretary. 3m9

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by

E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

FULLER'S PATENT INDIA RUBBER SPRING.



THESE SPRINGS ARE THE CHEAPEST, the lightest and most durable of any yet known. They are easily applied to new or old cars, and there is small possibility of any accident occurring to them.

Other parties through Mr. Ray set up claims to an India Rubber Spring which, though the same in principle, is very inferior in its working and durability.—Actions are in progress for an Infringement on Fuller's Patent against parties using that Spring.

The superiority of Fuller's Spring over that claimed by Mr. Ray is fully established and has frequently been testified to. The following are from gentlemen who have had much experience with both Springs.

—

"It will afford me pleasure to recommend your springs to the companies in this region, in preference to Ray's which I am confident are inferior in mechanical arrangement to yours." JOHN M'RAE,
Engineer S. Carolina R. R., Charleston.

—

"I do not hesitate to allow you to say that I concur in Mr. M'Rae's opinion that Ray's springs are inferior in mechanical arrangement to Fuller's. I repeatedly expressed that opinion long before Mr. M'Rae had seen your springs (as I believe) and entertain it still." WM. PARKER,
Gen'l Supt. of Baltimore and Ohio R. R.

—

Office of Sup't Norwich & Worcester R.R Co. }
December 26, 1849. }

"I most fully concur in the opinion of Jno. McRae, Engineer of S. Carolina Railroad, that 'Rays Springs are inferior to Fuller's Springs;' and shall with pleasure recommend them to all Railroad Companies for adoption. I have used both springs on this road and have no hesitation in saying that I should in all cases prefer Fuller's Spring."

SAM'L H. P. LEE, JR.,
Sup't and Engineer.

—

Office B. & P. R. R. Co., }
Boston, 20th December, 1849. }

"This company have cars fitted up with both Ray's and Fuller's 'Metallic India Rubber Springs,' and I do not hesitate to say that Fuller's arrangement is *very much superior* to Ray's.

W. RAYMOND LEE, Supt.

—

The following result has been obtained by experiment upon one railroad.

A set of Trucks fitted with Steel Springs cost	$190·77	and weigh	2355 lbs.
The same with Fuller's Springs, . . .	131·71	"	1911 lbs.
Difference, . .	$59·06	"	444 lbs.

Not only is there an advantage in the cost, but owing to the great reduction in weight, the car can be made lighter throughout, and so an enormous saving in weight may be effected in a Train.

G. M. KNEVITT, 38 Broadway, N. Y.,
General Agent for the U. S.

The Springs can also be had of
JAMES LEE & CO., 18 India Wharf, Boston, &
JAS. THORNLEY, 110 Chestnut St., Philad.
January 2, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

NOTICE TO

Superintendents of Railroads.

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, Superintendents, and all others interested in the subject. P. B. TYLER.

(COPY.)

UNITED STATES PATENT OFFICE, }
Washington City, D.C., April 28th, 1846. }

SIR: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully, EDMUND BURKE,
Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.

Philadelphia, June 16, 1849. 1y25

C. W. Bentley & Co,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Plowman Sts., near Balttmore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,

Baltimore, June 6, 1849.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

Coal.

CUMBERLAND SEMI-BITUMINOUS COAL superior quality for Locomotives, for sale by

H. B. TEBBETTS,
No. 40 Wall St., New York.
May 12, 1849. 1m19

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. STARKS & PRUYN, of Albany, New York, having at great expense establishe. a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. nave furnished several Iron Bridges for the Erie Canal, Albany Basin, etc. —and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds,	Canal Commissioners of the State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for the Albany Basin.
Messrs. Stone & Harris, Mr. Wm. Howe,	Railroad Bridge Builders, Springfield, Mass.
Mr. S. Whipple,	Engineer & Bridge Builder, Utica, N. Y.

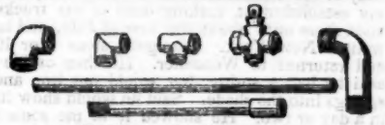
January 1, 1849.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by

MORRIS, TASKER & MORRIS.

Warehouse S. E. Corner of Third & Walnut Streets,

PHILADELPHIA.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to C. LIEBRICH,

46 South 8th St., Philadelphia.

November 3, 1849. 6m*

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also *Tenders, Wheels, Axles*, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen, or other Mills*, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

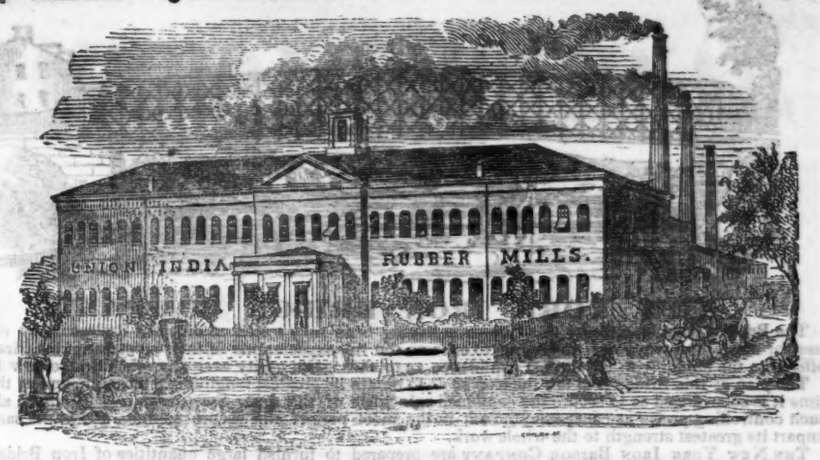
Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Plaining, Cutting and *Drilling Machines*, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 66 Beaver street, New York.

WM. B. LEONARD, *Agent.*

☞ HEAD QUARTERS FOR RUBBER GOODS. ☜



The Union India Rubber Company,

MANUFACTURERS AND DEALERS IN EVERY VARIETY OF

GOODYEAR'S PATENT METALLIC RUBBER FABRICS,

Which they offer on the most liberal terms at their Warehouse,

NO. 19 NASSAU STREET, NEW YORK.

Articles which this Company has the exclusive right to make comprise in part

Beds,	Overcoats,	Life Preservers,	Mail Bags,	Camp Blankets,
Pillows,	Leggins,	Boat Floats,	Breast Pumps,	Travelling Bags,
Cushions,	Syringes,	Souwesters,	Saddle Bags,	Wading Boots,
Caps,	Canteens,	Gun Cases,	Clothing of all kinds,	Horse Covers,
Tents,	Buoys,	Portable Boats,	Carriage Cloth, assor.	Piano Forte Covers,
Bottles,	Maps,	Horse Fenders,	Hospital Sheeting,	Railroad Gum,
Tubs,	Sheet Gum,	Water Tanks,	Mattrass Covers,	Hose, all kinds,
Caps,	Tarpaulins,	Army Goods,	Bathing Caps,	Shower Baths,
Pants,	Life Jackets,	Navy Goods,	Baptismal Pants,	Chest Expanders.

Together with *all new applications of the Patent Rubber*, which with Boots and Shoes, Packing, Machine Belting, Suspenders, Gloves and Mittins, Tobacco Wallets, Balls, Baby Jumpers, Elastic Bands, etc., etc., will be sold to the Trade at Factory prices.

*** All orders for special articles to be manufactured, should be accopanied with full descriptions and drawings.

October 20, 1849.

ETNA

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

☞ *Sole Manufacturers,* ☜

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

☞ The Premium of the AMERICAN INSTITUTE was awarded to the *Etna Safety Fuse* at the late Fair held in this city.

November 3, 1849. 1y

RAILROAD India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.
1849.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory,*

REUEL DEAN, ELIJAH PACKARD, ISAAC MILLS,	SPRINGFIELD, MASS.

1y48

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

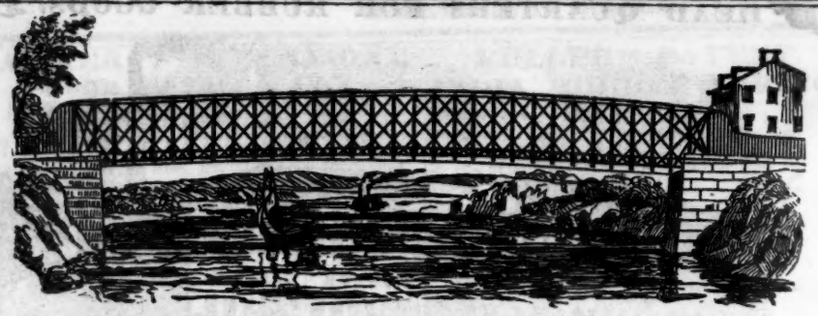
Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT

cor. Steuben and Water sts. Albany

August 24, 1848.



NEW YORK IRON BRIDGE COMPANY.

The Bridges manufactured by this Company having been fully tested on different Railroads, by constant use for more than two years, and found to answer the full expectations of their most sanguine friends, are offered to the public with the utmost confidence as to their great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time it is so arranged as to secure the combined principles of the *Arch, Suspension and Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

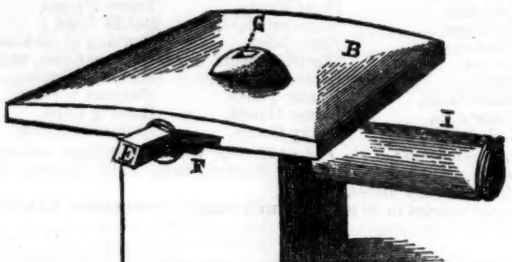
THE NEW YORK IRON BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, at short notice, and at moderate prices.

Models, and pamphlets giving full descriptions of the above BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 39 Jauncey Court, Wall st., or of W. RIDER & BROTHERS, 19 *Nassau Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

August 29, 1849.

E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them; they recommend themselves.

Western Railroad Shop,	Springfield,	Mass.
" "	Pittsfield,	"
Connecticut val."	Springfield	"
" "	N. Hampton	"
Hartford "	Hartford,	Conn.
New Haven "	New Haven	"
Norwich and Worcester,	Norwich	"
N. York and N. Haven,	New Haven	"
Saratoga and Whitehall,	Saratoga,	N. Y.
Vermont Central,		
Hudson and Berkshire,	Hudson,	
L. Kingsley,	Canton,	Mass.
Hadley Falls Co.	Ireland, W. Springfield,	Mass.
Sidney Patch,	Boston,	"
Ames Manuf. Co.,	Chickopee,	"
American Machine w'ks,	Springfield	"
Dean, Packard & Mills	"	"
G. Frank Bradley,	N. Haven,	Conn.
Andrew Baird,	"	"
Collis & Lawrence	"	"
Slate & Brown,	Windsor Locks,	
Gage,	Nashua,	N. H.
Machine shop,	Manchester,	"
Louis F. Lanney,	Baltimore,	Md.
J. H. Baerdid,	179 Chambers st.	N. Y.
J. Fanning	Rochester,	"
G. W. Hunt	41 Gold st.	"
Chamberlain & Waldo,		"
P. S. Burges, carriage maker,		"
Samuel Miller,		"
J. Leggett,	Steverson falls,	"
J. E. Harris,	Hillsdale,	"
John L. Graham,	Albany,	"
David Dalsell,	South Egremont,	Mass.
Roys & Wilcock,	Berlin,	Conn.

Agents for the sale of Tuyeres:
B. B. Stevens in New York and Connecticut.
W. S. Seymour in Massachusetts and R. Island.
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,
Springfield, Mass.

November 23, 1849.

CHRONOMETERS.

MERCHANTS, Ship Owners, Captains and others, are invited to examine the advantages offered in the purchase of Chronometers, by HEWITT & SON, Makers, 92 Wall Street, (up stairs,) in their superior quality and great reduction of price.

H. & S. have for many years been engaged in the manufacture of Chronometers, for the first houses in the trad and also, for the Navy of most Nations, and have received numerous rewards for their superior performance. Their Chronometers may be obtained from the Observatory at Liverpool, by order from H. & S., and at City Road, London. They are warranted to give satisfaction; but if not approved of, will be exchanged in New York, London, or Liverpool.

Rating, Cleaning and Repairs, at *low charges*.
The Trade supplyed on the most liberal terms.
November 17, 1849.

F. M. Ray's Patent India-rubber Car Springs.

India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, *as will invariably be done in every case of such violation.*

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his retnrn said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of *Goodyear's Metallic Rubber*, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

AMERICAN RAILROAD JOURNAL.

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HENRY V. POOR, Editor.

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American Railroad Journal.

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Saturday, April 20, 1850.

Forges and Iron Ores of Northern New York.

The forges upon the Saranac, Salmon and Little Ausable rivers, are supplied with ores from various sources. To the works situated near the lake these are mostly brought by water—a considerable proportion of them from the mines near Port Henry, which have already been described in the account of the works at this locality, published in the last volume of the Journal. Of the mines found in the granitic tract up these streams, I have no particular account to give. Two of them, however, from their connection with the works at the new State prison, demand some notice. In the year 1844, a tract of land was purchased for the State for a prison, in which the convicts were to be employed in mining and working the iron ores found on the property. The locality selected was seventeen miles west of Plattsburg and three miles north of the Saranac river. Here was a mine of some note known as the *Sailly and Averill vein*, and near it were indications of another workable vein, called the *Skinner vein*. The latter was purchased and works established for the manufacture of iron.—The mine, however, proved to be valueless; and in 1848 an arrangement was made, by which the State has the use for ten years of the ore from the Sailly and Averill vein. With this ore iron was made in the prison to considerable amount the last year; and I am informed arrangements are in progress for adding to the other operations of the convicts the conversion of a portion of the iron into cast steel. Prof. Emmons makes mention of this vein in his State Geological Report. The ore from it he says is "fine-grained and intermixed with greenish matter which appears to be pyroxene. It contains some sulphuret of iron, and about one-third of its weight of earthy matter. Its matrix is a red coarse granite, in which large crystals or masses of feldspar are quite common." This account does not seem to be of a very valuable ore, such as would lead a judicious iron man to invest a large amount of money in works to be wholly dependent upon it; still in the deficiency of better ores, it may serve to keep the prison works and its inmates in useful if not profitable occupation.—The locality is rather remote from the lake; and at the time of the establishment of the prison the expenses of transportation must have seriously lessened the profits of the manufacture. A plank road has, however, been lately built from Plattsburg up the valley of the Saranac, passing within five miles of the prison; and a branch is likely soon to be added, completing the connection of the works with the lake.

The principal mines of this region are on the hills near the Ausable river. It is in the valley of this river that the principal forges for their reduction are also found. I shall not undertake to describe each of these mines, an account of which may be found in Prof. Emmons' State Report, before referred to. I examined the most of them in the year 1844; since that time no new mines of any great consequence have been discovered, that I am aware of, and the *Arnold*, *Palmer*, *Cook* and *Winter* veins still continue, as they were then, the principal sources whence the great body of the ores is obtained.

The last named, owned by the Peru Iron Company, is situated within a mile of their works at Clintonville, on a high hill lying to the northeast of the village. This mine presents some curious features. The ore was first found on the surface in a solid layer a few feet thick, about a hundred feet in length and forty feet in width. Its course was north about 10° west, south 10° east. When this layer was removed, the whole deposit seemed to be exhausted. Beneath was seen only a band of very lean ore hardly distinguishable from the rock which included it. This was traced in the same direction with the main mass above, viz: north and south, and its inclination was towards the east, but little out of the vertical. On the course of its length also this band of ore dipped under the granite rock towards the north, leaving no trace in the rock at the surface. From its leanness, not from the failure of the ore, its exploration was soon abandoned. Subsequently, however, no less than six other parallel veins have been found and partially wrought within 175 feet. All have the same easterly dip, (unless the western one inclined westerly) and all present the same general features, though the qualities of the ore somewhat varied. They had been traced in 1844 no less than 200 feet on their course. In different spots they yielded abundant ore to pay the expenses of mining, but these richer portions would soon fail, and give place to lean ores small in quantity. When, however, these were worked through, rich spots would again be found. These features of irregular distribution, and yet of continuity of deposit, are common to all true veins. Not one of them has been wholly worked out.

These veins are crossed by dykes of greenstone, which though they seem to disturb them but little, yet from their common occurrence in connections with the veins of iron in this vicinity seem to have some unknown relation to them, and no doubt important influence upon their productiveness. In this instance no less than fourteen of these dykes, parallel in direction, and only a few feet in thickness, have been found cutting through the veins of ore nearly at right angles. The dykes must therefore have been formed subsequently to the vein fissures. Being less compact than the solid granite, they afford great facility for running cross cuts from vein to vein, or adit levels for entrances or drains.

I have no particular accounts of the production of these veins since the year 1844. I was then employed to examine them, and recommended the construction of an adit running in a westerly direction to cut all the veins. Could this be done at the lowest level, which is near the works of the company, an entrance could be had some 300 feet below the point where the veins are now worked, and the ore be run out on a level to the works.—The length, however, of such an adit will probably long prevent its construction, though the prospect

of cutting other veins than those now known might add some inducement for incurring the expense.

The *Cook* veins lie on a range of hills next west of the range containing the Winter veins. They are four in number, parallel to each other and very near together; their course about north and south. One is no less than thirteen feet thick, the rest make up about eleven feet more. The deposit has been traced by ore scattered in the surface of the rock for a mile and a half; and has been opened in several places on its range. The ore was highly esteemed, though it was not so free of gangue as the Arnold ore. It contains more protoxide and less peroxide of iron than the Arnold ore, and is decidedly magnetic.

The next range of hills west contains the *Arnold* veins. Of these also there are four, found on the face of a high hill, parallel to each other, and separated by only a few feet of rock. The following account of these is by Prof. Simmons, (see State Geological Report, p. 291.) "It appears that the vein which was first opened was the richest, and gave in the first place celebrity to the ore. This became known as the *Old Blue* vein, and probably from its purity and value has been of great use in giving an impulse to the manufacture of iron in this vicinity; and so high does this ore stand in market, that the veins are leased at the rate of six thousand dollars per year.

The four veins are nearly if not quite parallel, but differ in width; the old blue vein varies from two to eight feet. It is readily distinguished by the eye from the other veins, being always of a bluish tinge, and very frequently iridescent with purple hues. Its streak or powder is red; a fact which shows the state of oxidation. This vein has been worked to the depth of 260 feet, and in length about 80 rods. It course is north north-east, dip 70° west north-west. * * *

The Arnold ores are easy to reduce; the iron is tough and soft, and is very much employed for nails, and all those articles where tenacity is required, and where softness is not an objectionable character. * * This iron was at one time manufactured into cables; but for some cause it was acted upon by sea water more than the English cables, and hence became less saleable, when the business was abandoned. * * *

In the progress of working the veins several dykes have been encountered which cross them at various angles; and in one instance where the dyke is oblique to the direction of the vein, it has produced a shift; that is, the portion included by the dykes has been carried the width of the vein to the east. Those dykes which cross the veins at right angles, have produced no change or shift; while those which are oblique, have carried the veins several feet to the east."

The other veins are called—one, from the darker color of the ore, the *black* vein, and two, from an admixture of quartz, which gives them a light appearance, the *grey* veins. The first is from three to eleven feet thick; the other two from two to eight feet. All are highly charged with the peroxide of iron; the old blue vein has the greatest proportion apparently, and is the most esteemed.—This is so pure that the ore obtained from the deep workings is used in the forge fires without undergoing the separating process.

The *Palmer* vein is on still another range of hills west of those which contain the preceding veins. The ore occurs on both sides of a large vertical dyke of greenstone which is ten feet thick, and makes with the vein an acute angle. On the east side the ore was disseminated through the rock in the manner of a *Stocwerk*; sometimes in quantity sufficient to pay expenses of mining, and sometimes not. Other dykes of greenstone were here found passing obliquely into the main dyke. After some years of explorations on the east side, the great dyke was penetrated, and a large body of ore found on its west side. It did not come up to its surface, and so its presence had not been suspected. It lies against the dyke on one side, separating easily from it, and on the other cleaves to the west wall. This body of ore was found at one time no less than 35 feet thick. The workings, however, now carried to the depth of 250 feet, are seldom more than 20 feet in width; and sometimes the vein thins away to two feet. The dip of the vein is about 45°. The ore is highly esteemed for mixing with the richer Arnold ore. It contains considerable quartz from which it requires to be separated, and it has a larger proportion of the protoxide of iron and less of the peroxide than the Arnold ore.

These veins and a few others of less note have long supplied the forges of this vicinity. In a distance of sixteen miles on the valley of the Ausable there are no less than 58 forge fires, 50 of which were in operation a part at least of the last winter. The works are probably as extensive as the present facilities for procuring fuel will justify; but the amount of ore must be regarded as inexhaustible. Prof. Emmons estimates the whole width of the veins known in the district in 1839, leaving out the Winter veins, as not less than 136 feet. As explorations are continued from year to year, there is no doubt other valuable veins will hereafter be brought to light, which are now concealed beneath the superficial covering of the rocks or the granite cap itself. These insure to the region a permanent occupation in the manufacture of iron, for increased facilities of transportation will render available forests now remote, and even the anthracite of Pennsylvania may be in time profitably employed in the reduction of the ores. This fuel has already been brought to the blast furnaces at Port Henry for trying this experiment.

The next article upon this subject will be an account of the forges and the process of working them.

H.

Railway Progress.

Continued from page 214.

1. The tubular bridges of Mr. Robert Stevenson, as exemplified in the Conway and Britannia.

2. The double bridges of cast-iron framework by Mr. Robert Stevenson spanning the Tyne, under the name of the high level.

3. The bow-string bridges of Mr. Joseph Locke, spanning the Regent's Canal and Commercial-road on the Blackwall Extension railway, built by Fox, Henderson, and Co.

4. The triangular frame bridge of Captain Warren, of which samples may be seen on the Guildford and Reigate railway, and crossing Tooley street.

The Chester and Holyhead railway required a bridge via the Menai Straits—a piece of salt water subject to the "Droits of the Admiralty." For the passage of heavy trains a strong and rigid bridge was required, and Mr. Stephenson designed one of cast iron, in two spans of 450 feet each, which we regret was impeded in the execution by the *gaucherie* of the Admiralty; for it would have been a structure of great beauty and of permanent durability with little need of repair. Possibly, the Admiralty cared little to have a bridge made at all, upholding water locomotion in preference to land, and sailing vessels to steamers. But anyhow, they pronounced their fiat, without appeal, that no bridge should be erected which did not leave a clear treadway through the whole length, of one hundred feet above high water mark. "And then to breakfast with what appetite you have." * * *

But to return to our "muttons"—the Admiralty, the sheepish body who follow in old tracks and eschew new ones, their very name a misonomer.—Overseers! lookers-on! examiners! Overlookers, indeed, they might be called in one sense, since they cannot see what is palpable to all the world besides. We remember a case in which an inventor submitted to them a child of his brain. In due time he received a letter from the secretary, saying that "My lords did not think his plan would answer."—"Who are these lords, and what is their capacity for judging?" answered the poor man.—He hunted the origin of the opinion till he tracked it downwards to the most imbecile authority, that ever twaddled in mechanical engineering.

Such were the men who deemed they had set Robert Stephenson a problem beyond his art, to carry railway trains 450 feet through the air without centres or scaffolds whereon to build his bridge. In answer thereto he said, "Let there be a tunnel formed of boiler plates riveted together—a tube or pipe of sufficient diameter to bear the locomotive with all its load." This conception countersigned by his directors, Mr. Stephenson summoned around him the practical and scientific men, fitted to verify his plan in detail—Mr. Fairbairn, Mr. Clarke and Mr. Hodgkinson. Mr. Stephenson's first idea was a hollow tube, circular in form. Numerous experiments were tried on this form of tube, but, as might be expected, all were failures, by the tubes collapsing; and this led to other experiments, ending in tubes of an oblong section, with rows of cells of a square form at the top and bottom, to supply the strength to resist tension and compression. But after examining the drawings given in Mr. Fairbairn's book, we are of opinion that the cylindrial tubes have not had justice done to them, and that had the same arrangements for stiffening been used, to which the oblong form tubes owe their strength, a very different result would have been obtained. The circular tubes were of thin iron, badly connected. Had they been reinforced internally with edge rings like the internal diaphragms of a bamboo cane; or externally providing also a longitudinal rib, top and bottom, no collapse would have taken place, and we think a better form of tube would have been obtained. So far we think Mr. Stephenson's original conception has not been done justice to. One very serious objection to the top and bottom cells, to the originality of which Mr. Fairbairn lays claim, is the difficulty of continuous examination to guard against the effects of rust, which must sooner or later take place unless they be hermetically sealed, or kept painted, owing to the salt atmosphere. Twenty-eight horizontal flues, twenty inches square and fifteen hundred feet long each, and rough inside with angle iron, are not easy things for an engineer to examine. Had Mr. Stephenson's circular tubes been fairly strengthened, this difficulty would have been avoided, and the external form would have been better adapted to elude the force of the wind. The vertical plates of the square tubes would not maintain their form but for the mass of T iron with which they are ribbed, and had the circular tubes been ribbed, they also would have maintained their form, whether the ribs have been inside or out. * *

To conclude this part of our remarks, we could wish that Mr. Stephenson's original design of a massive and permanent cast iron bridge had been carried into effect; and in default of that, his circular tube, properly ribbed, and accessible at all portions to keep in repair and paint, a question which in all wrought iron structures must be carefully attended to at a great annual expense. But, taking it altogether, it is a giant thought, wrought out in a giant's work as a forerunner of greater things yet to come, a veritable production of a thorough English mind, regarding physical difficulties only as so many dams, against which energy may gather and heap itself up, till it bears down all opposition before it.

Our day dream is—six hours from London to Holyhead—then in an iron-screw steamer, double the size of the Great Britain, "ruling the waves straight," and bidding sea sickness avaunt—two hours to Kingston—then four hours by rail to Galway, the leaping-off place for the west—then, in another giant steamer, six days to New York—

London to New York in a week! What say ye, educators of the people, rulers of the state? With Ireland for a main trunk line and America for a terminus, how long will it be ere one link binds together the hearts of all nations speaking the language of Shakspeare and Milton? Above all things let us have a steamer—a floating bridge that may annihilate the channel between Holyhead and Kingston. The one thing needed is, great size to ensure swiftness, and stay the vertical heaving of Celtic diaphrams.

The bridges of the Stepney extension are hollow iron box girders, made of boiler plates riveted together similarly to the Brittania and Conway.—But they are not straight girders. The boxes are about 18 inches square in section, and they are constructed in a curved form, like a large bow, of the same sectional size throughout. To prevent this arch from flattening when the load is on it, the ends are made to abut on horizontal tie-rods of proportional strength. On those tie-rods the road is carried, vertical rods being attached betwcen the tie-rod and the bow, as in an ordinary suspension bridge, and diagonal braces are fixed so as to prevent oscillation. Thus the suspension being effected from a rigid arch, instead of a loose chain, a bridge is produced sufficiently rigid for railway trains, together with great lightness. What we have described is the structure of a bridge rib—two such ribs constituting the bridge to carry two lines of rails. The principle, in fact, is that of a roof-truss in an arched form, combining the principles of compression in the upper portion, and tension in the lower, as in an ordinary girder. The bridge which is erected over the Regent's Canal has a span of 117 feet. It is 27 feet wide, and the versed sine from rib to tie bar is eight feet. The total weight is 194 tons. These girders have been proved to a weight of two tons per foot run. As regards the power of resistance in the arch, we see no difficulty in carrying that to any amount, by making such ribs lie vertically one on top of the other, precisely as the Americans make timber arches of planks laid one on the other, like brickwork rings of our railway bridges. But for great spans we see a difficulty. It would scarcely be possible to maintain steadiness vertically, without connecting the ribs together by tie-bars at the top, boxing them as it were together, and perhaps increasing the width of the roadway. Beyond this, there still remains the difficulty as to how long such box girders will last. If they now be hermetically sealed, so that wet cannot penetrate the interior, we should entertain little doubt; but it is probable that. in future constructions, the plates will be effectually galvanized, to render them very durable.

The last kind of bridge we have to notice is that of Captain Warren, erected over the Guildford and Reigate Junction, and also in Tooley street, by the engineer of the Southeastern railway company.—The principle of this bridge is a horizontal tension bar or chain, which is rendered stiff by the application thereon of a number of triangular frames of cast iron. The lower points are attached to the tension-rod, and the upper ones abut together in a parallel line with a lower rod. By inserting small wedges between the abutting ends of the triangles, any amount of camber may be given to the bridge after erection, to compensate for irregularities or extra load, so as to preserve the horizontal level, or make the centre rise. It is evident that. as in an ordinary suspension chain, the whole strength of this bridge depends on the tension rods or chains—the end pressure of the angular frames merely serves to give horizontal stability and abutment. The bridge may be regarded as an ordinary girder, formed of open work, removing the portions near the neutral axes which yield little strength.

Having thus far "bridged" our way, we now may turn to the consideration of the "way" itself, and the uses to which it is mechanically applied. Years ago we called public attention to this subject, both in these pages and in those of the railway press; but at the time, our remarks received scarcely any attention, for railways were in their hey day, and sundry not very sound maxims were received as orthodox, such as weight is no object on railways—weight is speed—wear and tear are practically *nil*—rails will last thirty years—rolling stock an indefinite period—and so on. The errors since persisted in were not wholly without warning. A voice was lifted up against them, unregarded amidst the din ef cupidity, that defeated its own proposed object—gain.

THE RATIONALE OF ECONOMICAL TRACTION ON RAILWAYS.

The general principle that should govern the construction of railways in no wise differ from those of highways. They are both *roads* to bear rolling wheels, composed of a wearing surface and a substructure; in one case a surface of stone over the whole substructure, for the wheels to travel over all parts; in the other case, a narrow surface of iron fixed to timber or stone blocks forming the substructure, the wheels being trammelled to run on the iron surface.

On the highway the strength of the surface and substructure is usually estimated by the load which horses are capable of drawing; but to prevent the crushing of the surface, the wheels are increased in breadth in proportion to the load: and to produce voluntary compliance with this essential condition, the tolls on highways are lessened in proportion to the increased breadth of the tyres or tread on the road. There are, of course, limits to this, and the usual practical limit is what four horses can draw. Even with that limited weight, it was found that the abraiding surface beneath the wheels and the horses' feet was so serious an evil, by producing increased resistance, that hard iron rails with a narrow surface were substituted for the broad surface of yielding stone, and thus grew up the railway system.

But iron is not indefinitely hard, or substructure indefinitely durable; and these two facts were thoroughly appreciated by the directors of the Liverpool and Manchester railway when, in offering a premium for the best locomotive engine, they specified the maximum weight to be under five tons.

But they did not at the same time specify a maximum of speed because, at that time, speed was not imagined. Even passengers were not imagined.

Running trains commenced, and passengers increased; carriage after carriage was added, for steam did not break its wind, did not die on the spot, as horses would have done. The result was, a lessened speed from increased load. But speed must be had at any cost, and the power and weight of the engines were increased. Again more carriages were added, and again were the engines increased. Then began the struggle for speed between the broad and narrow gauge, till the rails and substructure gave way, and shareholders awakened to the conviction, that in six years they had worn out the fixed plant that was to have lasted thirty, and had also worn out—their dividends.

There is no doubt that speed is a useful thing, if it can be attained without too high a cost; and there is but little doubt that speed may be maintained without excessive cost. But to accomplish this, the managers of railways must take example from the practice of the highways. There the fast coach was the light coach—heavy conveyances travelled slowly. On railways this practice has been reversed. The heavier the engine the faster the speed—as though weight and speed were synonymous, and not the contrary. The whole present system is confined in a vicious circle, from which there is no escape but by remodelling.

The rate of travelling must in all cases be more costiy as excess of speed is attained; but we must not lose sight of the fact, that a light well constucted train, with a specific number of passengers, can travel at forty miles per hour at less cost than a heavy badly constructed train at twenty. And an engine of ten tons weight can attain as great speed as the largest engine that ever was constructed, and in most cases greater speed, precisely as the light Arab horse can outstrip the elephant, whose feet sink into the ground—precisely as rails sink beneath the tread of our monster engine.

To obtain the maximum of results on railways, it is essential, before all things, to ascertain the proportion of weight on the wheels of the rolling stock that the rails and substructure can sustain at the maximum speed, without crushing; for, the heavier the load, the less in prorortion must be the speed. It is quite true that the greater the speed the less is the vertical weight while running, but so much greater is the impinging force laterally and longitudinally, and proportionably greater will be the amount of destruction.

It must be evident that all surplus weight in rolling stock is an unnecessary evil, carrying about lumber without profit; and the longer and heavier the train, the greater is the proportionate weight. The mere arrangement of springs to provide against longitudinal concussion amounts to half a ton per vehicle. The enormous disproportion of dead-weight to load that has obtained on railways may may be gathered from the facts, that the light stagecoach weighed seventeen cwt. and carried nineteen persons including guard and driver, while the first class carriage on a railway weighs four tons and carries eighteen passengers only. The risk of longitudinally collision caused by long trains is the reason of this disproportion.

This surplus weight involves anothes difficulty. To start a train into motion requires many times the power needed to keep up speed when once attained, supposing the road to be level, and in good order. To check the momentum thus acquired, in case of an impending collision, or when stopping at a station, requires a corresponding amount of power, by using breaks, or by reversing the steam. All this is positive waste, and the more frequent the stopping the grater must be the amouut of waste.

There are two ways of considering the question of traction; mechanically and commercially. A thing may be mechanically practical which is commercially unadvisable.

Mechanically. First, the rails should be so hard as to resist abrasion on the surface in contact with the wheels; and so stiff, vertically and laterally, as to be incapable of deflection by weight or concussion of the passing load. And, moreover, ths joints should be so formedithat the rails at their abutment should be as free from deflection as at any portion of their mid length, precisely as a fishing rod is as strong at the ferule-joint as at any other portion.

Secondly. The substructure should be so firm, that no amount of rolling load can displace the sleepers, or crush them down so as to require "maintenance of way."

[*Foreign Correspondence of the Railroad Journal.*]

Rome--Papal States--Political Condition, etc.

ROME, February 5, 1850.

Rome, clustering with the memories of more than 20 centuries, and abounding in monuments of her former magnificence, is for the traveller one of the choice spots of the globe. Amid the remains of her palaces and temples, upon the walls of the Colisseum, or beneath the dome of the Pantheon he finds himself in the presence of ruins that speak of her best days—that carry him back to the time of the Cæsars, when "Rome sat upon her seven hills, and from her throne of beauty ruled the world." The contemplation of these grand momentos of the past cannot fail to awaken a flood of interesting associations. and to excite profound emotion. Rome has also much of present beauty and excellence to claim attention. The Church of St. Peter, the statue of Apollo Belvidere, and Raphael's painting of the Transfiguration of Christ, are the master-pieces of the world in their respective arts. Besides these, sculptures and paintings innumerable, many by the first masters, throng the galleries of the Vatican, the churches and the halls of palaces.

But while this ancient and once mighty city teems with interest and delight to the stranger, it is far from being a paradise for its own inhabitants. They are oppressed, poor and discontented. For a government they have the anamoly of an absolute elective despotism, and the blighting influence of its policy is every where apparent. Possessing a climate equal to any in Italy, and a soil of quite average fertility, the Papal States present almost the desolation of a desert. Here and there, it is true, one sees a herd of fine grisly oxen—a flock of sheep or goats attended by a shepperd dressed in skins, a fine field of grain and a decent stone farm

house, but they are exceptions, and in pleasing contrast to the general want of thrift.

The dominions of the pope contain 13,000 Italian square miles, and a population little short of 2,800,000.

Enterprise being quite equivalent to heresy, such a thing as a railroad does not exist. One was indeed contemplated to connect this city with Naples, pursuing nearly the route of the ancient Appian way, and some 8 or 10 miles of it were graded, but the government fearing, it is said, the republican tendency of railroads, long since discontinued operations. Perhaps the lack of money had quite as much to do with its abandonment as political reasons; but be it the one or the other, Rome, which was the pioneer in facilitating intercommunication by the construction of that magnificent highway, the "via Appia," portions of which are still to be seen at Pompeii, Pozznoli, and here near St. Sebastian's gate, is likely to be last in the enjoyment of that wonder worker of modern times —the railroad. In the canal or magnetic telegraph she or her rulers take no part.

I have not, even with the efficient aid of Mr. Piale, the owner of a library in place d'Espagna, whose acquaintance every stranger in Rome should make, been able to get any very satisfactory data as to the commerce of the Papal States. It must, however, be very inconsiderable, as one would naturally infer from the illiberal policy of the government, and it is chiefly carried on through Anconer, the principal port of the States in the Adriatic. The number of vessels belonging to the Papal States, exclusive of fishing smacks, may safely, perhaps, be put down as not exceeding one hundred —and of an aggregate tonnage not exceeding eight thousand tons. The chief articles of export are alumn, rice, paper, oil, sheepskins, potash, oak bark and ship timber—imports are fish, and cotton goods in considerable quantities.

The principal manufactures are paper at Faligno, chiefly sent to the Levant and S.America; violin strings, Mosaics and Roman pearl at Rome; maccaroni at Bologna and Ancona, together with some articles of taste.

The revenue according to a recent estimate amounts to $8,602,500 annually. The expense of collecting it $2,043,500, leaving for a net revenue $6,559,000. Of this sum the Holy See derives $1,017,505 from lotteries, and expend $1,451,498 for military force. The total expenses of government according to Dr. Bowerings report on Italian statistics, exceeds the net revenue by $779,984, being $7,338,924. The consolidated debt prior to the recent troubles amon't. to about $30,000,000 and must now amount at least to $35,000,000. The Papal finances are not therefore in a flattering condition, and to add to the evils of a bankrupt treasury, the paper currency (the only money now in circulation) has depreciated 35 per cent.

The present political condition of Popedom is unhappy indeed, and what the end will be no one can foretell.

Pope Pius IX., unless his looks belie his character, unless he has succeeded in giving an entirely false impression of himself to the mass of the people, is really a kind hearted man, and would willingly make almost any sacrifice to improve the condition of his subjects. But unfortunately his head is not so good as his heart. He is a weak man, and is surrounded by cardinals to whom any good epithet would be misapplied. On his election to the papal chair, Pius IX. immediately commenced reforms which had long but vainly been demanded by the people from his predecessors.—One of these measures was the granting a representative assembly, to share with him the temporal government of his dominions. This assembly on coming together proposed a list of names for officers of the cabinet, which the Pope accepted and confirmed. The leading genius of this ministry was Mezzino, in the office of Secretary of State, a man of masterly ability, and a thorough republican whose manly and eloquent address subsequently as a Trimevir of the Republic, to the French, every one will remember.

But with a government thus constituted the people are not content. They demand a written constitution. The cardinals oppose. Both parties become excited, and the Pope bewildered and disgusted flies from Rome, leaving the government in the hands of the ministry and assembly. Twice or thrice delegates are sent to beseech the grant of a constitution and his return to Rome, but they get no hearing. In this exigency the legislative assembly decrees its own dissolution, and the election, by universal suffrage, of a constituent assembly, to take into consideration the state of affairs.—The constituent assembly is decreed by a larger vote in proportion than that of France. It comes together, and after deliberation proclaims a republic, with a Trinmvirate, at the head of which it places Mezzino, previously the minister of state under the Pope.

The republic is moving on finely, when suddenly the French appear, and after much fighting, in which the Romans under Garibaldi show prodigies of valor, they gain possession of the city with the loss of 12,000 men to themselves and 4,000 to the Romans. The principal members of the republican government escape to Geneva, and the Pope delegates three cardinals to administer the government, and under whose management it has since continued. Never were there greater tyrants than have been these three cardinals. To exterminate every vestage of republicanism has been their object, and most industriously have they labored to accomplish it. Thousands have been arrested and thrown into prison, and thousands more have escaped only by flight, with English or American passports. The work is still pursued with unabated vigor. A person utters an important remark in the evening, and before the morning he is hurried off to the inquisition. A few evenings since a woman performed some religious rite for a relative who fell in defence of the city, and being reported by her servant, was within two hours in the hands of the inquisition. On the night of the 2d instant more than 200 persons wore brought from various parts of popedom to the Palace of the Quirinal and thence taken by the Swiss Guard to the prisons of the inquisition. An American was arrested, but on the interferance of our Charge, Mr. Cass, they pleaded mistake as an excuse, and immediately set him at liberty, and made ample remuneration for injuries sustained. It was only last week one of the best and most influential of the nobility of Rome had notice that he must leave the country within 48 hours, or pay a fine of $21,000. He declined doing either, but replied that they might take him, well knowing the government would not dare do it for fear of the people. The affair was finally settled by his paying $7,000. The charge against him was, that *his nephew wore a republican hat during the siege of the city by the French.*

Yesterday (4th instant) the landlord of the Hotel d'Angletere left the country, having previously received notice to leave within 48 hours. Charge—utterance of republican sentiments. Almost every third man is a spy. Arrests are usually made in the dead of the night, and the person hurried off without any form of trial, or knowing who is his accuser. This is the second day of the great festival of the carnival, but it is far from being as usual a merry time for Rome. The priests and the French strive to make the most of it, but the Romans make it a point to take no part in it. Anonymous letters were a few days since sent to the principal men here to refrain from participating in the festivities on pain of assassination. It was contemplated having a funeral oration on the first day of carnival, for those who fell in defence of the city, but it coming to the ears of government, a veto was put upon it. Yesterday, however, a notice appeared at the corner of the streets advising Romans not to take part in the carnival, but rather go to the gate where the principal contest took place, and shed tears for those who fell in defence of the liberties of Rome, and in the afternoon more than 50,000 people were there assembled.

These facts will give some idea of the manner in which the government is administered, and which has inspired a hatred towards those who administer it, as deep seated and bitter as their character and conduct merits. The French are regarded with hardly less animosiiy, though, aside from the purpose of their coming, they have merited great praise for refraining from every species of impropriety. They do not deserve, and probably do not expect, much friendship from the Romans, but they have a right certainly to the kind regards of the priests and cardinals whom they reinstated in power. They have, however, received not the slightest evidence of this; but on the contrary have been most shabbily treated by them, and in revenge for this, it is said they are now holding little coteries, and preaching republicanism. This fact becoming known within the past week to the government, has created quite an alarm.

Add to these the fact that the republican government (which is really the government de jure, and so considers itself) is holding its session at Geneva, and there issues its decrees—that this government has solemnly charged the Pope with treason to his country—1st for deserting the government of his own making—2d for refusing all intercourse with it, and finally for bringing foreign troops to fight against and oppress his own people—that it has formally tried him upon the charge, found him guilty, and passed sentence of death upon him, which sentance it is said more tnan a hundred persons here have taken a solemn oath to execute in case he returns, and you have data that may give some idea of the singularly mixed and unsettled state of affairs here at the present time; but if from them you are able to foreshadow coming events, I confess you are the better prophet. If the French were to leave and any thing were to occur that would prevent Austria from pushing her troops here, as she has into most other Italian cities, right sure I am that hardly a fortnight would elapse before the republican government would be reinstated, and instead of the priests and cardinals being allowed quietly and unharmed to escape to Naples as before, their heads would fly like those of chickens and turkeys, the week before thanksgiving in New England. Almost everywhere during the recent revolutions the people manifested the greatest moderation. They spared the lives of their most inveterate enemies. They are now paying

for their leniency by the lives of their best friends. They are learning a lesson which will teach them in the next uprising (as it is sure to come sooner or later,) not to leave little stocks for combined foreign legitimists to reinstate. They will make a clean sweep.

Railway Economy.

COST OF RUNNING AT HIGH SPEED.

The cost of running a railroad, or what is now more commonly called "*the working expenses*" of a line, varies upon different roads, according to the characteristics of the line to be run, the uniformity of the weight of load carried, and the comparative speed maintained in the running of trains. If a line of railway could be constructed with a straight and level track, of sufficient length to give full play to the practical working capacity of an engine, and the road could command a business equal to its working power, something like an absolute rule could be determined as to the capacity of the railway and its working economy. Any rule attempted to be deduced from any other given state of facts, must fall short of absolute precision.

All practical rules, therefore, touching the management of railways, are only approximate and hypothetical. Still these estimates are so far correct, as to give certain general rules for calculating the cost of carrying a given weight per mile—allowing that locomotive engines will practically accomplish all the results, which their assumed capacity supposes.

It was shown by the returns of the Liverpool and Manchester railway, that the average cost per mile run, for locomotive expenses, including passenger and freight trains, for the six months ending June 20th, 1845, was as follows, viz:

Average Cost per Mile Run.

	Decimal in pence.
Coke	2·054
Oil	0·107
Tallow	0 053
Waste	0·010
Enginemen and firemen's wages	1·335
Material for repairs	0·401
Wages for repairs	0·431
Proportion of general charges	1·733
	6·124

This did not include any charge for renewing engines when worn out; but all economically managed roads should charge off something for this contingency, in the nature of a sinking fund for repairs. This item will be exceedingly small, because engines properly built have not been long enough in use on any railway in the world, to enable us to say how long an engine will continue to do good service before being worn out. If kept in suitable repair, they may continue to work for unknown years to come. It may therefore be assumed that 6½d. or 12½ cents per mile was the average cost in 1845 of running a locomotive on the Liverpool and Manchester railway. The average speed adopted was: for 1st class trains, 30 miles an hour; 2d class, 18 miles an hour; goods trains, 16 miles an hour. The general expenses of running are not stated.

The returns of the Great Western railway for six months ending June 30th, 1845, showed that 807,989 miles had been run by their engines on *passenger trains* at an average cost for locomotive power of 10½d. per mile.

Those of the London and Birmingham railway (now the London and Northwestern) ran 609,663 miles in the same time, at a cost of 10·6d. per mile.

It is assumed by Bourne in his Catechism of the Steam Engine, that the average cost of locomotive expenses in running on the English roads, when economically managed need not exceed 6d. per mile run. The two roads referred to above, are the great roads of England; representing the rival interests of the broad and narrow gauge parties.—The trains on these roads are run with greater speed than is allowed on any other roads.

The express trains of the Great Western are run at a speed of from 45 to 50 miles an hour; and those of the London and Northwestern have now attained a speed of from 40 to 45 miles per hour.—Trial trips on each road have been run at greater speed, reaching 72, 80 and even at the rate of 84 miles to the hour for short distances on the Southwestern. With the exception of the express trains, on a few of the leading roads in England, the average speed of their trains is scarcely above that now adopted on the roads of this country.

The following statement shows the comparative working expenses per mile run on the Great Western, and London and Birmingham roads in 1844:

	Great Western. s. d.	London and Birmingham. s. d.
Locomotive	0 11·927	0 12·728
Repairs of carriages	—	0 1·883
" wagons	0 1·476	0 0·598
Guard and porters	0 6·514	0 3·075
Police	—	0 2·163
Direction and management	0 4·441	0 2·827
General charges	0 3·191	0 3·372
Depreciation	0 3·201	0 5·588
Rates and taxes	0 3·790	0 3·346
Maintenance	0 7·332	0 8·388
	3 5·872	3 7·968
	83 cents.	85 cents.

The annual returns of the New York railroad companies for 1849, an abstract of which was published in this paper under date of March 30th last, show the following as the average speed of passenger trains on the leading railroads of New York,

	Miles per hour.
Hudson River	30
Attica and Buffalo	26
Utica and Schenectady	28
Auburn and Syracuse	26
Syracuse and Utica	25
New York and Erie	22

The annual returns of the Massachusetts railroads for 1848 and 1849, give the following statements as to the speed of passenger trains during the last two years as follows, viz:

	1848. Miles per hour. Express trains.	1848. Miles per hour. Accommodation trains.	1849. Miles per hour. Express trains.	1849. Miles per hour. Accommodation trains.
Hart. & N. H.	25	—	39	23
Western	28	22	37	22
Bost. & Maine.	—	22	35	23
Bost. & Prov.	30	—	34½	25
Bost. & Lowell.	28	24	33½	25
Bost. & Worc'r.	—	22	29	24
Fitchburg	25	20	30	22
Eastern	—	21	—	22

The foregoing comparative statement shows a most extraordinary increase of speed: the same comparative increase substantially appears upon many, if not all the Massachusetts roads.

Here is one prominent cause of the increase of expenses on the Massachusetts roads, and furnishes aid in reaching a solution of the real cause of the present depressed condition of the stock in most of the Massachusetts railroad companies.

The increase of business has not been equal to the actual increase in the working expense of the lines.

The average number of passengers in the express trains of Massachusetts will not probably exceed 120 per trip. To carry this number of passengers, requires the carryihg of the following dead weight over the road:

Engine, average weight	20 tons.
Tender	8 "
Wood	1 "
Water, 1,500 galls., 8 lbs. per gall., 6 tons, average two-thirds	4 "
Baggage car	8 "
Two passenger cars, weight 10 tons each	20 "
Passengers	10 "
	71 tons.

The average usually allowed on all railways is 12 persons to a ton, without baggage, and 10 persons to a ton including baggage.

To carry 10 tons of persons, equivalent to 120 passengers, with their baggage, requires the carrying of a gross load of 71 tons, or 1180 lbs. weight to each passenger carried; or equal to 1000 lbs. dead weight to each person.

The atmospheric resistance to a train increases as the square of the velocity, or in other words, the atmospheric resistance to be overcome, is four times as great when running at the rate of 40 miles to the hour, as it is when running at the rate of 20 miles to the hour.

Edward Bury, Esq., the distinguished locomotive builder of England, stated in his testimony before the gauge commissioners, in 1845, *that the injury to the permanent way was in proportion to the speed run.* The same principle applies to all the working expenses of a road, including the wear and tear of engines and track. It was recently stated in the *North British Review* that the increased expense to the London and Northwestern railroad company of the Express trains between London and Liverpool, over the charge of running them at the ordinary speed of 30 miles an hour, is over $100,000 per annum.

To draw a train of 110 tons upon a railroad at a speed of 30 miles to the hour, if there was no atmospheric resistance, would require equal to 97·3 horse power. The atmospheric resistance with a load of 110 tons is at the rate of 12 lbs. a ton, equal to 1320 lbs. running at the rate of 30 miles to the hour. This is equal to 105·8 horse power, which added to 97·3 makes 203·1 horse power required to carry 110 tons at the rate of 30 miles to the hour in a calm atmosphere, or allowing there is no resistance from side or head winds.

Increase this speed to 60 miles to the hour, and you require *double* the power of propulsion, and increase in *a four fold degree* the atmospheric resistance. The power required may be stated as follows, viz:

Double the friction of the train 97·3×2 is	194·6 horse power.
Take the square of the atmospheric resistance 105·8×4 is	423·2 "
As twice the distance is passed over in the same time, you double this resistance	423·2 "
And you have a total of	1,041 horse power,

required to carry 110 tons at a speed of 60 miles to the hour.

To run therefore at high speed on railroads, requiring an increased expenditure far beyond what is the limit of economical working, and generally far beyond what any road can sustain.

The public are not willing, at the present time, to pay the needful equivalent for being carried at high velocity.

There must be a radical change in the manage-

ment of railways in this respect, or the most disastrous consequences are sure to follow. Already the public are reminded of the fact that the older roads in the country are rapidly going to decay. The fearful accident recently on the Norwich and Worcester railway, is an admonition that should not be lost. The frequent recurrence of explosions of locomotive engines, points out the necessity of more careful attention to the condition of engines and the character of those who have them in charge.

It was stated by several of the most distinguished engine builders and engineers of Great Britain, before the gauge commissioners in 1845, that the speed then attained on both the broad and narrow gauge roads, was dangerous and absurd, and that a check should be placed upon the speed of trains. With the facilities now enjoyed by means of the telegraph, the commercial world can dispense with the present dangerous and expensive system of running at such fearful velocities.

It is true, there are no mechanical difficulties in running at a speed of 100 miles to the hour upon a straight and level track. The only limit to the speed of the locomotive, is the limit of the strength of iron. If greater speed is required, wrought iron must in all cases take the place of cast iron wheels.

The centrifugal force upon a wheel driven at the rate of 60 feet per second, is equal to a pressure of 1100 lbs. to the square inch. This has been the maximum speed regarded as safe in fly wheels of cast iron. Fly wheels have been known to burst under a less speed even than that.

The speed of 60 miles to the hour is at the rate of 88 feet per second. The danger of using cast iron wheels in running at extraordinary velocities, is apparent to the most ordinary mind.

The mechanical principles applicable to railway running are far from being understood by a majority of men employed in conducting railroads, and many of the most important of these principles are daily violated upon very many of the railroads of the country.

The science of railway construction has probably reached very nearly a practical limit. The mere cost of construction cannot now be much reduced, except through the iniroduction of cheaper labor. But in the management of railways, the public mind has hardly begun to embrace the idea in any adequare measure.

This question is now forced upon many railroad companies by the depressed condition of their stock. The idea is gradually gaining ground, that railroads should be built and managed by men of skill and experience in the departments of practical science. Who would think of sending to sea a most valuable ship and cargo under charge of a man who knew nothing of nautical science, or the commonest principles of navigation? Still we see men placed in charge of railways who are as ignorant of all mechanical principles—of the nature of steam—or of the capacity of the locomotive engine, as they are of an unknown language.

This state of things can only be corrected by applying individual sagacity to railroad management. Every day brings into use some valuable discovery—some decided improvement upon past experience. Railroad directors should be men of practical sagacity united to comprehensive attainments, and enlarged purposes. The person at the head of the company, should be the best informed man in all the practical details of railway science. Without the possession of these qualities, there will soon be apparent a laxity of discipline and a neglect of duty in all the departments of railway management. Military discipline is no more essential to the efficiency of an army, than it is in the management of a railway. The man who supposes that situations upon a railway can be parcelled out as sinecures to his friends, may rely that it can only be done at an infinite cost to the road. No department of duty or discipline can compare with that required in the railway service. The best skill can alone ensure proper success.

A board of directors have haggled about the salary of an engine driver, for the purpose of saving a few dollars a month in his pay, and have then put an unsuitable man in his place, who in one trip of his engine has cost the company, by his want of knowledge, twice the amount of his yearly salary.

This topic is full of interest and instruction. It has reference to the most important functions in the railway service.

The public is impatient of delay, and demand speed in travelling without paying the equivalent price. Persons can be carried by railway as cheaply as merchandise. Why not graduate the price of tickets by the speed required, and let those who must go fast pay in proportion to the increased expense of carrying them at high speed? and those who are willing to go at reasonable rates, pay for them accordingly.

Gold Mining.

Sir Roderick Murchison, the celebrated mineralogist, recently delivered at the Royal Institution of Great Britain, a most interesting lecture on "The distribution of gold ore in the crust and upon the surface of the globe."

He stated it to be an axiom that gold ore never occurs in any great quantity except under certain conditions or "constants," which may be thus briefly explained to be where the ancient stratified rocks which constitute the backbones of continents or great islands, have been penetrated and altered and crystallized by the intrusion of igneous or eruptive matter. The golden vein-stones which rise up from beneath have been carefully examined to a very considerable distance below the surface, and it has been ascertained that they invariably deteriorate in value, *i. e.*, in the per centage of pure gold on the weight of the deeper the search is made. All the rich portions are found near the surface; hence the powerful rubbing or attrition which that surface has undergone in ancient times, has, by grinding down the tops of mountains, carried away by far the greatest quantity of valuable ore, and distributed it in heaps of gravel and sand, in plateaux or in valleys.

The learned lecturer inferred that gold was of a very recent date as respects geological history, though of great antiquity as respects the human race. Indeed, the accumulations on the flanks of the Ural mountains clearly proved that iron and copper were formed before gold. These Ural mountains and Siberia furnish more than half of all the gold produced throughout the world. From the Ural mountains and the twenty-five districts of Siberia, in the region around the flourishing city of Krasnojarsk, of which one is 200 miles in length and 100 in breadth, where the metal is invariably found in the broken materials and debris above mentioned, nearly the value of £3,800,000 in gold is annually derived. Precisely similar geologically, are the chief backbones of the American continent, which also afford at intervals clustered collections of gold ore. As a proof that gold in a mine diminishes as the solid rock is perforated downwards, the authority of Colonel Colquhoun, R.A., long resident in Mexico, was cited to show that in Guadalupe y Calno, vein-stones opened out by British enterprise, though at first productive, gradually declined in value, and became poor as the ore was sought for deeper, and finally became purely argentiferous. The same was shown by Mr. Warrington Smyth to be the case in the gold mines of Hungary.

A brief historical sketch of the subject was given, in which it was stated that Job was a true and good geologist, when he said "There is a vein for the silver," and "the earth hath dust of gold." "If, however," said Sir Roderick, in conclusion, "we allow ourselves to speculate on the moral effects of this golden shower, we must, I apprehend, admit with the ancient historian (but no geologist) Diodorus Siculus, that gold is obtained with toil, is retained with difficulty, creates everywhe anxiety, and in its use produces both pleasure and pain."

Ohio.

Cleveland, Painesville and Ashtabula Railroad.—We find in the True Democrat an abstract of a report of F. Harbach, Esq., of his survey of this road, of which we give the following particulars:

Two lines have been surveyed and estimated on this route.

First, the south route, beginning at the city station, following the hill side along the Ohio canal to Kingsbury's run—thence to the level of the plain—and thence straight to Euclid creek; Chagrin river, crossing at Willoughby; Grand river, crossing at the "Furnace," near Painesville; Ashtabula river, crossing at Ashtabula; Kingsville; Conneaut creek, near Conneaut; and last, to the intersection of the route surveyed and located at Erie, at the Pennsylvania State line.

This line follows the "South Ridge," mainly.—With the exception of getting up Kingsbury's run, and curvings to obtain good crossings at rivers, only *three* curves occur in the whole distance—over *seventy-one miles.*

Second, the north route, begins at the outer station of the Cleveland and Pittsburgh railroad, two miles from the lake station of C., C. C. railroad—thence straight to Euclid creek and Willoughby over the south line; thence to Grand river, two-thirds of a mile north of Painesville—thence on a line parallel, nearly, to south line, and from half to one and a half miles distant from it, to the Pennsylvania line.

Differences in the two lines trifling. Characteristics similar. This is the result:

	South route.	North route.
Total rise	338 feet.	312 feet.
fall	291 "	246 "
Highest ground passed over by south route	150 ft.	
" " " north	" 125 ft.	
Difference in favor of north route	25 ft.	

The table of curvatures and of curves shows the same result. In the latter, the difference in favor of the North route, is 3.39 miles.

So as to distance. The length in straight line is:—

South route	60·69
North route	64·08

Equated length of line.	South line	North do.
For curvature	0,58	0,37
For grades	35,13	27,90
Add actual length	71,46	71,46
	107,17	99,73

Difference in favor of north route, 7,44.

Mr. Harbach estimates the cost as follows:—

South route	$1,351,913 95
North route	1,308,506 79

The difference, then, in the cost of the two lines stands thus:—

Difference in favor of northern route	$43,407 16
South route per mile	18,907 88
North route " "	18,307 79
Difference in favor of north route per mile	607 09

Mr. Harbach says:

I have estimated the excavations twenty feet, and the embankments sixteen feet wide at the grand line. Culverts of stone or brick, and bridges of a most substantial character, of timber trusses, rails of the T pattern, weighing sixty-five pounds per yard, laid

upon cross-ties two and a half feet apart, with the usual fastenings; ballasting of sand or gravel, wherever improper material is found; and with ample equipments, buildings, shops and fixtures to do the work in the most economical manner. Thus you will have a road for about $19,000 per mile, of the very highest order, essentially straight and level, which peculiarly adapts it for successful competition with steamers on the lake; the average cost of which per mile is far below that of the eastern roads, and will compare favorably with any of the western lines in progress of construction.

The lines surveyed present very remarkable faciilities for the construction of a railroad at cheap cost, and calculated for the highest speeds. The construction of a railroad from Buffalo to the west by the lake shore, and the early completion of the New York and Erie railroad, gives to the above line a great importance, as it will open a communication between the roads at the east and the net works of railways, which is so rapidly covering the whole west. We have no road in our minds that offers superior inducements to the capitalist to invest in it. In addition to this, it is a work absolutely necessary to the full developement of the capacity for business of the great lines on either side. With so many inducements to its construction, and such an interest in its favor, we count upon its completion at an early date.

The following is a list of the directors of the company:

Alfred Kelley, Columbus, Ohio.
Heman B. Ely, Cleveland, "
Peleg P. Sandford, Painesville, Ohio.
David R. Paige, Centerville. Lake co., O.
George G. Gillett, Kingsville, Ashta. co., O.
Ebeneezer B. Woodbury, Kelloggsville, Ashtabula co., O.
Samuel L. Selden, Rochester, N.Y.

Acting President,
HEMAN. B. ELY,
Treasurer,
ABEL KIMBALL.
Madison, Lake Co., O.
Chief Engineer,
FREDERICK HARBACH,
Cleveland, Ohio.

New Hampshire.

New projects of railroads continue to be started in New England in spite of the depressed condition of railroad property in that quarter. We learn that a thorough survey for a railroad, to connect the Contoocook Valley road with the Ashuelot is about to be made, and the able engineer, Jonathan Adams, has been engaged to make the survey. The enterprise is urged forward by the Concord people and others. There is a prospect that something effective will be done.

OHIO AND PENNSYLVANIA RAILROAD.

We learn that the bond of the cities of Pittsburg and Allegheny, which were issued to this company, to the amount of $400,000, have been negotiated in this market. This sum places the company in a position to push forward the work with vigor.

We find in the Pittsburg Gazette the following statement of the present condition of the work:

"The division between Pittsburg and Beaver will be let on the 24th of this month, and there is money enough provided to finish, and probably to stock it. The division between Beaver and the Ohio State line is all under contract, and will be finished in good time. The individual subscriptions of Pittsburg and Allegheny are appropriated to this division, and will be sufficient to prepare it for the rails. The Columbiana county division, between the State line, and the line of the Wellsville and Cleveland road, is nearly ready for letting—the locating party being expected to finish their work in a few days. This division will be let to contractors on the 8th of May. Sufficient stock has been subscribed in Columbiana county, mostly in Salem, to grade and bridge the road thro' that county. There is a small section of this division, which passes through a corner of Mahoning county, for which no provision has been made, and the directors look to Pittsburg to supply the necessary means.

The division extending from the line of the Wellsville and Cleveland road to the Ohio canal, at Massillon, has been under contract for some months, and will be finished quite early. The people of Stark county provide the money for grading and bridging this division.

Under these favorable circumstances of the enterprize, there is nothing extravagant in anticipating that, by the 1st of July, 1851, the cars will be running from Pittsburg to Cleveland, and to Massillon, on the Ohio canal; and, by the ensuing fall—if the citizens of Wayne and Richland counties come up to the work with proper spirit—the road may be finished."

Morris Canal.

We copy the following table prepared by Mr. Talcott, of the Morris canal, of tonnage transported on the canal for the past 3 years:

	1847.	1848.	1849.
Bar and pig iron	16,940	16,556	25,918
Blooms and billets	1,720	1,697	1,638
Brick	2,122	3,757	1,807
Castings & machin'y.	230	195	107
Clay, earth, sand etc..	6,621	4,825	2,320
Dry goods & groceries	2,585	2,314	3,813
Flour, feed, etc	2,410	4,319	5,189
Iron rails	5,020	7,377	47
Hoop poles, rails, etc.			957
Lime	1,764	2,528	2,163
Limestone	1,810	5,480	3,397
Lumber	3,364	5,450	5,838
Mineral coal	67,068	89,879	114,017
Nails, spikes, etc	807	401	305
Ore and forge cinders.	28,314	46,922	53,772
Plaster	738	2,102	1,823
Timber and logs	3,324	1,913	2,406
Wood, bark, etc	6,010	6,605	5,325
Sundries	4,130	1,167	1,997
Total	154,559	204,682	234,305

The business in 1845 amounted to only 58,249 tons, and in 1846 to 109,505. Thus it will be seen that the business has steadily increased since the year 1845, and that it was more than doubled in 4 years ending in December last.

Alabama.

West Point Railroad.—We learn from the Montgomery Journal that the stockholders of the Montgomery and West Point railroad held their third annual meeting on Monday, the 8th inst. Charles T. Pollard was re-elected president, and Thomas M. Cowles, Wm. Taylor and Abner McGehee, of Ala., and Hon. John P. King, of Ga., directors.

The following extract from the report of the president, shows the operations of the company for the year ending the 1st March, 1850.

Gross receipts of the road		$120,781 61
Receipts from other sources		4,656 16
Making a total income of		$1,125,437 77
The expenses of the road have been	$55,213 64	
Interest paid on loans	18,017 93	
		73,231 57
Showing a net income of		$52,206 24

or within a fraction of 8½ per cent. on the capital stock of the company.

Lead.

The following table is taken from the report of Capt. Wm. H. Bell, U. S. inspectors of the mines, dated at St. Louis, Sep. 30, 1842:—

Production of the lead mines in the valley of the Mississippi for twenty years, each year ending Aug. 31.

Yrs.	Upper Mississippi mines. Lbs.	Lower Missouri mines. Lbs.	Total production. Lbs.	Price of lead at St. Louis, Mo., p. lb. Cents.
1823..	335,130		335,130	
1824..	175,220		175,220	
1825..	664,530	2,203,850	2,868,380	
1826..	958,842	3,208,374	3,967,216	
1827..	5,182,180	3,616,204	8,798,384	4½ to 5
1828..	11,105,810	6,399,714	17,505,524	3½ to 3¾
1829..	13,343,950	4,183,124	17,527,074	2 to 1¾
1830:	11,942,000	4,103,894	16,045,894	2 to 2½
1831..	12,026,000	2,859,628	14,885,628	2 to 3½
1832..	12,099,360	7,810,456	19,909,816	4 to 4½
1833..	13,593,330	8,285,496	21,878,826	4 to 4½
1834..	17,245,620	6,391,216	23,636,836	4 to 4½
1835..	18,970,910	7,228,108	26,199,018	4½ to 5½
1836..	25,512,550	6,329,914	31,842,464	5 to 5½
1837..	21,745,780	5,121,624	26,867,404	
1838..	24,217,760	6,050,170	30,267,930	
1839..	26,826,450	7,981,628	34,808,078	4½ to 4¾
1840..	26,849,900	6,255,754	33,105,654	4½ to 4¾
1841..	33,274,155	7,430,896	40,705,051	3¾ to 3⅞
1842..	40,854,100	*7,500,000	48,354,100	
Total	316,923,577	102,760,050	419,683,627	

	Pounds.
NOTE.—During the years 1841 and 1842, it is stated that there were exported of lead, from the mines by Lake Michigan	2,000,000
Also, the annual produce of the following mines is	
For those of New Hampshire	1,000
For those of New York	670,000
For those of Virginia	878,648
For those of North Carolina	10,000
	3,589,648
Add to this the product of the valley mines for 1842, as above	48,354,100
Making a total annual production of lead from all the mines of the United States	51,913,748

* Supposed number of pounds.

Georgia.

Georgia Railroad.—Comparative statement of the Georgia railroad for the two years ending 31st March, 1849 and 1850, respectively:

	Passengers.	Freights, Mails, etc.	Total.
1849–50..	189,650 45	437,162 86	626,813 31
1848–49..	166,484 04	415,530 55	582,014 59
Increase..	23,166 41	21,632 31	44,798 72

The company have declared a dividend of 3½ per cent for the past six months.

LEWISTON AND QUEENSTON SUSPENSION BRIDGE.

This bridge, which, when completed, will be by many feet the longest in the world, in one clear span, has recently been put under contract by the joint companies holding the charters from New York and the British governments. Capt. Edwd. W. Serrell has been appointed the engineer to carry the project out to completion. The bridge will connect the shores of the Niagara river at Lewiston, N. Y., and Queenston, Canada West, and will be 1,042 feet between the points of support, the roadway will be 75 feet above the water, 19 feet wide, and will be capable of sustaining a load of 800 tons. The towers of support are to be built of hydraulic masonry, surmounted with cast iron caps, which are 76 feet above the roadway. The natur-

al advantages of the locality are so great that it is estimated to cost much less than so large a work would in almost any other locality. It is proposed to have it so far completed by September that it may be opened for travel going to the Provincial Fair.

AMERICAN RAILROAD JOURNAL.

Saturday, April 20, 1850.

Doremus & Nixon,
IMPORTERS AND FURNISHERS
OF
RAILROAD CAR AND COACH TRIMMINGS.

Plain Garnet Plush. | Fig. Garnet Plush (Butterfly pat.
" Crimson " | " Crimson " (Elegant.
" Scarlet " | " " " (Gen. Taylor.

BROCATELLES.

Crimson Silk Brocatelles. Gold and Maroon do.
Gold and Blue " " Brown "
Silk and Wool " of every color.

MOQUETTS,

Of elegant designs and colors.

GERMAN CLOTH FOR CAR LININGS.

The most beautiful goods ever shown in this country, and the subscribers are the sole agents for the sale of them.

Oil cloths Enamelled with Gold. } These goods can be
" " Silver. } furnished in any
Do. Silver ground velvet printed. } dimensions req'd.

CURLED HAIR

Of every description and quality.

JNO. W. A. STRICKLAND, Agent.
New York, 1850. 1y16

Machinery Oil.

WE the undersigned are now manufacturing an oil intended for the use of Railroads, Steamers and Manufacturing establishments. It has been in use several months and has given very general satisfaction. Our price is uniformly 70 cts. per gallon Enquiries or or orders attended to promptly. Address

ROBBINS, LANGDON & CO.,
133 Water street, corner Pine, New York.

CERTIFICATES.

Bridgeport, Nov. 7th, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: After about three months' trial of your oil, I have come to the conclusion to use it entirely on the engines on the New York and New Haven and the New Haven and Northampton Railroads for the following reasons:

1. It wears quite as long as sperm oil.
2. So far as I have tried it, it keeps the Journals equally cool as sperm oil.
3. I have no complaint from our men about cleaning the engines, and presume it is equally as easy to clean an engine by using your oil as it is in using sperm oil.
4. I can see no reason why it is not equal to the best of sperm oil for lubricating machinery.
5. There is in my opinion a very great saving to all parties in using your oil for lubricating machinery.
6. I believe it will stand cold weather better than any sperm oil. Very respectfully yours,

R. B. MASON, Supt. N.Y. & N.H. Railway.

Steamboat C. Vanderbilt, N. York, Oct. 11, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: In reply to your inquiries respecting the qualities of your machinery oil, I am happy to inform you that I have been using the article sent me for some time past, not only on the engine but on all other machinery connected with it: and from a careful and close examination, I am well satisfied that your oil is as good as the best of sperm oil for lubricating machinery. I have recommended Mr. Lockwood the agent of the company, to give you their orders.

Yours respectfully, JAMES BAKER,
Engineer Steamboat C. Vanderbilt, Pier 3, N.R.

Brooklyn, August 29, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: Your letter of the 29th was received, and I am happy to inform you that I have used your machinery oil throughout my establishment, and I am still of the opinion that it is as good as the best of sperm oil for lubricating machinery. I should be pleased at any time to have your friends witness the working, and I am sure, after once doing so, will give you their orders. Please send me another cask by the evening of the 3d, and by so doing you will much oblige,

W. M. BURDON, Manufacturer of
Steam Engines and other Machinery, 102 Front st.

Steamer Bay State, Oct. 22d, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: In answer to your request for my testimony as to the machinery oil manufactured by you, I will say that I have used it for some time past on the Bay State, and am perfectly satisfied that your statement to me of its good qualities, is correct. As far as its lasting properties go, it wears equally long as sperm oil, runs perfectly free, and has no appearance of thickening. As seeing is better than hearing, I would recommend you to send your friends on board our boat, and they can then, by ocular demonstration, judge for themselves. Yours repectfully, JOHN GRAY,
Engineer of Steamer Bay State, Pier 3, N.R.

Steamboat Knickerbocker, Sept. 22, 1849.

Gentlemen: Mr. Hall, Agent of the Norwich and New London Steamboat Co., placed in my hands some of your machinery oil, which he desired me to use on the engine and other machinery, which I have done, and was so much pleased with the working, that I recommended the owners to give you their orders.

I have been using the article since August 19, and with perfect satisfaction, and I am well satisfied that your oil is as good as the best of sperm for lubricating machinery. I am yours very respectfully,

SAMUEL CARTER,
Engineer of Steamboat Knickerbocker, Pier 18, N.R.
To Messrs. Robbins, Langdon & Co.,
Oil Merchants, 133 Water street, New York.

Steamboat Worcester, N. York, Oct. 15, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I beg to acknowledge the receipt of your letter requesting my opinion as to your oil for machinery, which I had not time to reply to previous to my return to Norwich. I have been using your oil on the engine and machinery of the Worcester with perfect success, and have much pleasure in testifying as to its good qualities. In my opinion, the journals keep cooler with your oil than with sperm, and it wears equally well. Should you at any time wish to refer to me as to your oil, I beg you will do so without hesitation. Yours respectfully, JAS. CROOKER.
Engineer Steamboat Worcester, Pier 18, N. R.

New York, August 3d, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I received your letter in regard to your oil for machinery, which I handed to our engineer, and have much pleasure in sending you an extract from his letter to me on the subject: "I have applied the oil sent me upon our hot journals and cylinders, and find that they keep cooler with it than with sperm oil. I cannot find any fault with the oil, although I have watched it carefully. I have also tried it against an equal quantity of sperm oil, and find it wears quite as well." You are quite at liberty to show this extract to your friends, and shall be happy to give any further certificate you may require. WM. RIDER,
Treasurer Union India-rubber Co., 19 Nassau st. N.Y.

New York, March 22d, 1850.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I have been using your machinery oil on the engine and other machinery of the Steamer Southerner running from this to Charleston, and find it equal to sperm oil. I shall continue the use of the same, and you are at liberty to refer to me at any time.

Yours respectfully, DAVID N. MAXON,
Chief Engineer Steamer Southerner.

Providence, March 22d, 1850.

Messrs. Robbins, Langdon & Co.,

Gentlemen: We have given your machine oil a thorough trial, and find that it possesses all the qualities that we could wish, as it works better than any sperm oil we have ever used. Our shafts that required oiling four times a day with the best sperm oil that we could get, work equally as well by the application of your oil twice a day, and your oil stands cold weather much better than any oil we have ever used. Our engineer having had years' experience in running and making engines, we put great confidence in his judgment, and he gives it as his opinion that your oil is fully equal to if not better than any he ever used; and we shall soon give you an order for more, as we do not want any other kind of oil as long as we can get yours.

Very respectfully yours,
JACKSON, CLARK & CO.

BALTIMORE AND OHIO RAILROAD.

Contractors will please notice the Advertisement of further lettings upon this road on another page. They embrace a large amount of work, and are well worth the attention of persons engaged upon public works.

Shall we Manufacture or Import Iron for our Railroads?

From the extent to which we are engaged in this country in the construction of railroads, and from the fact that we are now importing all the rails we use, it becomes a matter of great importance to consider the influence which the large drain of money required for their purchase will exert both upon the general business of the country, and upon the ability of our people to continue the construction of these works.

Unless there should be some unforeseen check given to these enterprises, there will be constructed at least 10,000 miles of railroad in the next ten years. This may seem a large estimate to some, but when we consider that, to make up this amount each State would have to build only 33½ miles yearly, and that many will build twice or three times that extent, we think it will be found to be much below, instead of above the mark. A very large amount of iron in addition will be required for relaying of tracks and repairs of roads. This estimate will requre over 100,000 tons annually, and will, at present present prices, cost at least $5,000,000,000. This sum, therefore, must be sent yearly to England for the article of rails alone, unless we engage in their manufacture.

The high price of money which has so long prevailed in face of the great importations of gold, is in part owing to the large sums we send abroad on account of our railroads. The condition of the money market in Massachusetts, affords a good illustration of the influence of railroads in absorbing the capital of a community. That State has built more railroads than any other, but she is vastly richer in proportion. She is the most commercial of any, and commerce is the parent of wealth. Her floating capital has been almost entirely invested in railroads and manufacturing establishments.—She has not enough left to carry on with ease her ordinary business. She is compelled to borrow from others, till she can, by industry, create sufficient to supply the place of that which she has, for all present practicable purposes, lost. This great scarcity of money has depressed the price of her railroad and manufacturing stocks of a ruinous degree, and has placed it out of her power to continue the construction of railroads as formerly, even if she desired to do so. Thus far in New England alone have railroads been prosecuted beyond the ability of those constructing them; so far, we mean, as to influence business in all its ramifications.—There have been numerous instances of failure of railroads in various parts of the country; but these involved the failure of a few individuals, and not the embarrassment of a whole community.

Very many States are now commencing upon projects, which, if carried out, will require as large, and in fact a much larger amount of capital in proportion to their means than Massachusetts has expended. These States after exhausting their domestic resources, will resort to the commercial cities, and New York in particular, for money to complete their works, till a very similar state of things which we now witness in New England, will exist in every part of the country. Boston has been exhausted by New England, and there is danger that New York will be, in the same manner, by the other parts of the country, more immediately connected with her. Our people will continue to build railroads till every farmer in the United States inhabiting a fertile section shall be in convenient distance of one. Men will make any sacrifice, rather than give up this wonderful invention, which gives

him the facility of omnipresence, as far as this is consistent with the conditions of material existence. Who, now on the stage of active life, does not remember that in his boyhood, the most intense desire of his heart was to be able to fly through space, with the ease, freedom, and swiftness of the bird? Yet while we have been coming up to take our place on the theatre of action, this dream and longing of the soul has been realised, and we can now move along, in those most elegant and comfortable saloons, unconscious almost of motion, with a speed exceeding that of the eagle in its flight. Is it to be expected that man will relinquish this new and wonderful faculty? No. They will retain it at the expense of every other. But the enormous cost of these works threatens to make us pay a heavy penalty for their enjoyment.; that the simultaneous construction of so many lines will so far exhaust the available means of the country as to seriously affect, not only the value of this kind of property, but injuriously to interfere with all the business transactions of society. As our people, therefore, will continue to push them forward, irrespective of these consequences, it becomes of the highest importance that we should pursue that course which shall avoid these consequences as far as can be done.

In looking at the State of Indiana, for instance, we see that her people find no difficulty in constructing their numerous lines of railroad in progress, until they come to the purchase of the iron—their difficulties then commence. All before that is easy work. What is the reason of this? It is not because her people have not an abundance of property, but they have no money. They have labor, and abundance of food for the support of this labor. A substantial farmer, therefore, can with the aid of the force which he must maintain to carry on his farm, prepare a section of the line for rails, which would cost $1,000, easier than he can raise $200 in money. He has a surplus of every thing the country can produce. This surplus can be made available to sustain and pay labor, but from his great distance from market it cannot be converted into money. His hay, oats, wheat, corn, potatoes, beef, pork, his horses and cattle, his implements of husbandry, are just as efficient as money itself, to execute this work; yet these could not be converted into money without an immense sacrifice. An independent farmer, therefore, without any embarrassment, can devote one-fourth of his time and an equal amount of his surplus products, to the work of constructing railroads, and receive in exchange its stock. There are great numbers of people on every line who would be glad to do this, and in the Southern States in particular, large amounts of stock in their railways are subscribed to by planters, with an understanding that they are to work out their assessments. If instead of the road being constructed by those who take stock in it, it is let to contractors, the result is pretty much the same. The proportion of profits to the work performed, bears but a very small per centage.—The money paid for work returns immediately to those who contributed it, for supplies of provisions, lumber, labor, etc. But little goes out of the country. It changes hands, but soon returns to the hands of its original possessor for articles he can very easily produce, but which he could perhaps never sell, except for the opportunity thus afforded.

Suppose that for the grading of her roads the people of Indiana were compelled to send to England for workmen, who brought with them all their tolls, provisions, every thing necessary to complete their work, and returned when it was finished, without leaving one cent behind of what they had received, would not her people find it just as difficult to grade their roads as to furnish the iron? Precisely so. It would be of no consequence whether their money went to England for grading or for iron. Would not such a state of things as we have supposed render it impossible to build at present one road now in progress? We think that every person connected with them would answer "yes."—These men would at once say, "we had better pay twice as much to our own citizens to grade our roads as we must pay to the Englishman. The former will take what we have got, or buy what we have to sell, but the latter we can only pay with money, and this we cannot get; neither can we send to England our products, as nine out of ten would cost more for transportation than they would be worth after they reached a market. We cannot send to England our horses or wagons, hay, oats, potatoes or timber, our beef, pork or wheat, save at an enormous cost, and some of them not at all.—All these our own contractors will purchase at a fair price. We have an abundance of property, and if we can exchange it for railroads we can build them without feeling the burden."

Indiana possesses a plenty of coal and iron ore. If she had furnaces and rolling mills, would she not find herself able to purchase the iron for her roads in the same manner that she is able to procure their grading? We are to presume that the profits of iron making would be no greater than of grading a railroad. All that is paid for iron over and above profits goes in some way or other to the support and maintenance of labor. The labor engaged in iron making must be supported by the various other industrial classes, which make up the community; so rails, after they are made, represent an equal aggregate value of a large amount of the products of the other classes. The process of iron making is simply the conversion of one kind of products into another. The capacity of this State to purchase English iron must depend entirely upon her ability to convert her products into money. She has no market at home for her surplus. All must be exported. Now, her most valuable products will not bear the cost of transportation, consequently they are not available to the purchase of iron. She exports wheat and port; but it costs more to send these articles to England than to produce them; involving a greater loss than their whole home value. The surplus of these articles is limited, and last year the wheat crop of that state was an entire failure. So long therefore as she continues to purchase from abroad, her ability to do this is limited to the extent of her surplus of a few exportable articles, which cost more to send to a market than they are worth when prepared for exportation. But if she manufactured her iron, her surplus would at once be available, and she would save all the expense of forwarding her bulky products to a market, which imposes so heavy a burden upon her industry. A rail, therefore, manufactured at home may be very cheap at $50 per ton, and very dear at $40 when imported.

But this is not the only evil of foreign importation. In common parlance, we say that gold and silver is the standard of value of other articles. By conventional agreement, we substitute a paper currency for that of gold and silver, for all the leading transactions of business. This circulating medium is nominally based upon precious metals; but banks issue in bills four or five times the amount of the specie they keep for their redemption. This is found to be a safe limit. The object of the substitution being to dispense with the use of the precious metals as far as possible from a service where they are not employed in reproduction. The withdrawal of $5,000,000 from the vaults of banks would have an effect to reduce their loans five times this amount. Money of consequence would become scarce, the value of all kinds of property fall, and embarrassment and distress would ensue. But so long as the specie remains in the country such fluctuations cannot take place. Our paper circulation would never become less from the payment of this sum in gold for rails of a domestic manufacture.—Thus while home manufacture enables us to accomplish works which would be beyond our ability if we imported from abroad the materials of their construction, we avoid those fluctuations in business which must occur when, by importing beyond our means, we place ourselves in the hands of a foreign creditor.

We hope that this subject, which so deeply concerns all the varied interests of the country, will attract the attention it deserves. We are happy to state in this connection that the view of the subject which we have presented, has received the favorable consideration of some of the leading men of Virginia, and they are seriously proposing to manufacture from their own ores the iron for the great Virginia and Tennessee railroad. This course we are satisfied will be found to be for her interest in the end. She is embarking with her State credit largely in public works. If she would escape embarrassment, and preserve her energies unimpaired, she must produce within herself whatever is necessary to their construction. She has every material of the greatest excellence, and in inexhaustible abundance, and it would be a reproach to her to go abroad for iron for her roads instead of making these instrumental in the developement of her great resources.

CAR TRIMMINGS FOR RAILROADS.

Railroad Companies and Car Makers are invited to examine the Advertisement of Messrs. Doremus & Nixon, in another part of our paper. The goods offered have been selected for our market by an agent who visited Europe expressly for this purpose, and are of the most elegant description, and of the most approved quality and styles.

OIL FOR MACHINERY.

We would call the attention of all interested in the machinery of any kind to the Advertisement of Messrs. Robbins, Langdon & Co., in another column. The certificates published are from persons whose well known reputation is a sufficient guarantee for their statements, and who have the best opportunity of subjecting it to thorough tests. As oil forms an important item in the cost of working machinery, we think that all engaged in running it should, upon the evidence presented to them, make a trial of this new article.

Massachusetts.

Western Railroad.—The following statement exhibits the earnings of this road for the four months ending the 31st ult., compared with those of the same period last year:

	Passengers.	Freight.	Other sources.
1850...	$144,410 86	$213,794 13	$9,820 32
1849...	137,050 63	199,868 54	9,636 80
Increase..	7,360 23	13,925 59	183 52

The total increase is thus shown to be 21,469 34 dollars, and the expenses will not vary materially from those of last year.

Our Foreign Correspondence.

In this day's paper will be found a very interesting letter from our foreign correspondent in Rome and the Papal Statcs. Though not strictly coming within the range of subjcts to which the Journal is devoted, we cannot doubt that it will prove equally acceptable to our readers as the former ones.

These letters from Europe which have appeared in the Journal are from the pen of John M. Adams, Esq., of Portland, Maine, a gentleman actively devoted to the legal profession, who is abroad on a tour of observation and pleasure. Mr. Adams has enjoyed unusual facilities for observation, from the fact of possessing a thorough knowledge of the French language, and a sufficient acquaintance with those of Italy and Germany to have all the needful information accessible to a stranger. With a taste for the physical sciences, and a fondness for an examination of public works, we look for some valuable hints upon European railways, both in Great Britain and on the continent.

While in England Mr. Adams proposes to give attention to the doings of Parliament and the law courts, his visit being purely for observation in view of improvement in the legal profession, his letters are not made up for the purpose of ekeing out a page of argued correspondence; but are the voluntary offerings of a personal friend, upon such topics as he may have time to write upon, that may be suited to the purposes of the Journal. They possess, therefore, a value far beyond ordinary newspaper correspondence.

We have been happy to know they have attracted attention in various quarters, from the style of their composition and the valuable information contained in them; and we are happy to say that Mr. Adams has again returned to Paris, from whence our last advices from him are dated, and that we hope hereafter to be favored with a letter by every steamer.

The Railroad Journal.

The American Railroad Journal was the earliest work published in any part of the world devoted to the railway interest. In its pages is to be found the only full and complete history of railway progress, the only authentic record of the discoveries and improvements which the greatest of practical sciences has drawn forth and perfected.

The means of enhancing its value under its present proprietorship are far greater than when we assumed its charge about one year ago. It will continue to furnish the best practical results as to the construction and working of railroads, the details of progress in steam navigation, commerce, mining, manufactures, banking and the mechanic arts.

The best practical talent that can be enlisted in the country is engaged to supply its pages. The mining interest will find evidence of the first systematic attempt to give a full view of the iron, copper and lead ores of the country, with the results of practical working. In all the branches of mechanical industry we seek to discard the crude conceits of unskilled pretension, the thousand useless novelties issuing from the Patent Office, and to give encouragement to whatever can be made useful in relieving the wants, in ministering to the pleasures, or contributing to the advancement of the race.

We invite contributions to its pages from all who sympathise in our labors, information in any form from those most interested in the progress of mechanical invention, and substantial support from all who are willing to aid us in the arduous duties of our position.

NOTICE TO SUBSCRIBERS.

Such of our Subscribers as wish for back numbers of our paper to complete their sets, or who may not have received the index of the past year, are requested to send for them without delay.

Back Volumes of the RAILROAD JOURNAL

From its commencement can be had on application to this office.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK,
March 6, 1850. Troy, N. Y.

TO CONTRACTORS.

PROPOSALS will be received at the offices of the Baltimore and Ohio Railroad Company, at Baltimore, Cumberland and Wheeling, up to Wednesday, the 22d day of May next inclusive, for the graduation and masonry of the portion of that road, extending from the bridge on the northwestern turnpike, over the Tygart's valley river, to a point on the south fork of Fish creek, near the mouth of Long Drain, embracing some 56 sections. Also the 8 sections between the mouth of Grave creek and the city of Wheeling.

A variety of work will be presented by the line to be let, which will include light and moderately heavy grading. Several short tunnels, and a considerable amount of bridge masonry.

Specifications may be had at the above named offices on and after the 1st of May ensuing, and further information obtained from the engineer upon the line.

Unexceptionable tesiimonials of character must accompany the bids, and the bidders are requested to state what other work, if any, they are engaged in, and when it will be completed.

The work must be energetically prosecuted.

By order of the President and Directors.
BENJ. H. LATROBE, Chief Engineer.
Baltimore, April 10, 1850. 16

Notice to Contractors.

Bellefontaine and Indiana Railroad.

SEALED PROPOSALS will be received at the Company's Office in SIDNEY, Shelby Co., Ohio, on and after Wednesday, May 5th, 1850, for doing the Grubbing, Clearing, Grading and Masonry, of such portions of the BELLEFONTAINE AND INDIANA Railroad, as can be prepared for letting by the 15th.

The line extends from some point on the Cleveland, Columbus and Cincinnati Railroad, through MARION, BELLEFONTAINE and SIDNEY, to the STATE LINE, between Ohio and Indiana, a total distance of about 120 miles.

It is expected that the line from the eastern terminus to Marion, about 22 miles and from Bellefontaine to Sidney, about 23 miles, will then be ready to let; and the remainder of the route as soon thereafter as it can be located and prepared.

Specifications and plans will be ready for inspection and all necessary information may be obtained on application at the Office of the Chief Engineer, in Marion, or to J. Pemberton, Resident Engineer, in Sidney, after the 5th of May.

By order of the Board of Directors.
W. MILNOR ROBERTS, Chief Eng.
Engineer's Office, Marion, Ohio,
March 18, 1850. 15tf

Notice to Contractors.

Ohio and Pennsylvania Railroad.

PROPOSALS will be received at the office of the Ohio and Pennsylvania Railroad Co., in the city of Pittsburg, until Wednesday, the 24th day of April, 1850, for the Grading and Masonry of the Railroad, from Allegheny city to the mouth of Big Beaver, a distance of twenty-four miles. Drawings and Specifications of the work to be let, may be seen at the office in Pittsburg, for one week previous to the letting, on application to Solomon W. Roberts, Chief Engineer, and information may be obtained at any time at the office of Edward Warner, Resident Engineer of the Eastern Division, New Brighton, Beaver County, Pa. The work is well worthy of the attention of good contractors.

The Grading and Masonry of the line in Columbiana County, Ohio, will be let at Salem, on Wednesday, the 8th of May.

By order of the Board of Directors.
15tf WM. ROBINSON, JR.

Railroad Iron Wanted.

Virginia and Tennessee Railroad Office,
Lynchburg, Va., March 16, 1850.

PROPOSALS will be received at this Office until the 6th of May next, for the delivery in Lynchburg, of Iron Rails for the Virginia and Tennessee Railroad, to be manufactured in or near this town of Virginia Iron.

The said Iron to be made of the best pig metal, and to be delivered at the following times, and in the following quantities, viz: Six thousand tons in the year 1851, and the remainder (about 15,000 tons) for the whole road, equally, in the years 1852 and 1853.

Separate proposals will also be received for the delivery in Lynchburg, of pig metal, at times and in quantities sufficient for the manufacture of the rails above mentioned, said delivery to commence as early as the first of November, 1850.

The rails and the pig metal will be subjected to strict inspection; the rails are to weigh about 60 lbs. per yard.

At the same time, proposals will be received for the above quantity of Iron, manufactured any where else in America or in England, to be delivered in Lynchburg or Richmond, under the same general conditions as those prescribed for Virginia Iron, manufactured at Lynchburg. Satisfactory security will be required.

Proposals for delivering any portion of the above mentioned quantity, and at periods varying from those specified above, will be considered.

By order of the Board of Directors.
CHAS. F. M. GARNETT,
15tf Chief Engineer.

To Contractors.

SEALED PROPOSALS will be received at the Office of the Nashville and Chattanooga Railroad Company in Chattanooga until the 20th day of May next, for the graduation and masonry of the Chattanooga Division of said Road—embracing a distance of 27½ miles.

The graduation will be heavy for about 15 miles, (in crossing Rackoon Mountain, and passing around Lookout Mountain bluffs), the balance, average work, The masonry will consist chiefly of cut stone Piers for Tennessee River Bridge, (about 4 000 Perches,) Piers for running Water Bridge, (about 2,000 Perches), and Pier for Lookout Creek Bridge, about 500 Perches.

Sealed proposals will also be received at the same time and place, for the graduation of 10 miles of the Eastern end of the Winchester Division—embracing some heavy work. Also the masonry of Elk River and Widow's Creek Bridges.

Plans and Profiles of the Work will be exhibited, specifications furnished, and all other desired information given, on application to Mr. James A. Corry, the Engineer in charge of the work, at the Company's Office in Chattanooga, from the 10th of May until the day of letting.

Before making bids the line should be throughly examined. The depths of the Cuts and Embankments can be ascertained from the centre stakes. The work to be commenced immediately after the letting. And that portion from Chattanooga to Lookout Bluffs to be completed by the 1st of December next. The other sections to be finished successively on toward the West end of the Division—the last by the 1st of October, 1851.

The most satisfactory testimonials will be required. The payments will be made in cash—reserving the usual 20 per cent. until the completion of the work.

By order of the Board.
JAMES H. GRANT, Chief Eng.
Nashville, Tenn., March 14, 1850.

To Miners and Mining Companies.

THE undersigned would respectfully call the attention of those persons engaged in mineral operations on Lake Superior to the following list of articles which will be sold on accommodating terms, viz:

600 bbls. Corn fed No. 1 Mess Pork.
500 " Stall fed Mess Beef.
25,000 lbs. "Sugar cured canvassed" Hams.
2,200 " Dried Beef.
60,000 " "Kiln dried" Corn Meal,
500 bush. White "Field" Beans.
300 " Canada" Peas.
500 " Dried Apples.
100 bbls. and half bbls. "cucumber" Pickles.
50 " Sour Krout.
30 bush. Onions.
1,000 Beefs' Tongues Smoked and in Pickle.
10,000 lbs. "Mould" Candles.
10,000 " "Hard" Soap.

Also, a full and large supply of all articles that may be required by Mining Companies and those connected with them. C. A. TROWBRIDGE,
127 Jefferson Avenue, Detroit, Michigan.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio, 75 cts.

Part III of "Specimens of the Stone, Iron and Timber Bridges, &c. &c. of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections and isometrical views of the elegant timber arch 275 feet span, at Cascade Creek, Pa. on the line of the N. Y. & Erie R. R., and of a plank bridge 100 feet span across the Mahawk River near Rome, on the line of the U. and S. R.R. with the specifications, estimates, bills of timber, iron, etc.

N.B.—This work is published by subscription of the most eminent in the engineering profession of the U. States, and will be completed in 12 parts, at 75 cents each to those who remit their names and subscriptions before the 1st May next, after which the price will be raised to $1 per part.

To those making a present remittance of $5, and the remainder $4, when they have been supplied with the first six parts, the work will be forwarded regularly as published. Parties remitting $9 shall receive it monthly POST-FREE in any part of the United States.

"It is a work that was a great desideratum, and must prove of great benefit to the engineering profession generally, and especially to the tyro in practical engineering and mechanical knowledge; in truth it strikes us, that it would require years of labor and patient toil on the part of a young engineer to prepare the drawings, and collect the information that will be embodied in this work, and can now be secured for the trifling sum of $9"—[Scientific Amer. March 16, 1850.

In connection with this subject (Iron Railroad Structures) we take occasion to call attention again to Mr. Duggan's valuable and expensive publication, exhibiting drawings, with full descriptions of the various stone, iron and wooden bridges, viaducts, tunnels, culverts, etc., of all the Railroads in the United States. Mr. Duggan is an accomplished Architect and Civil Engineer, who came from Ireland to this country to exercise his profession; but finding Railroad construction here, in many respects, different from that he had been accustomed to in Europe, he applied himself to the study of our system; and the fruits of his researches and investigations embodied in this work, are well calculated to meet the exigencies of engineers, and to assist draughtsmen, bridge builders, mechanics and students. The work will be supplied to subscribers only, in 12 parts, at 75 cents each.—[N. Y. Journal of Commerce, Feb. 14, 1850.

Published by GEORGE DUGGAN,
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THE Advertiser continues to make to order the Enamelled Car Linings which have been so highly approved the last three years, and are now exclusively used by all the Northern Railroads. No pains are spared to get out new styles, and adapt them to the tastes of every consumer.

Orders addressed to CHARLES STODDER, No. 75 Kilby street, Boston, will have prompt attention.

March 23, 1850. 2m

FOWLER M. RAY'S Patent India-rubber Railroad CAR SPRING.

New York and Erie Railroad Shops.
Piermont, March 26, 1850.

This will certify that from practical experience in the use of Fowler M. Ray's India rubber Car Springs, I believe them to be far superior to any others now in use.

I have never known them to be affected by any change of temperature, as other Rubber Springs have been affected on this road.

I am at the present time repairing a Passenger Car that Mr. Ray and myself mounted with his springs about two years and eight months since.

The springs are at the present time as perfect, to all appearances, as when first applied to the car.

Respectfully yours,
HORACE B. GARDNER,
Foreman of the Car Shops.

—

Fall River, February 2, 1850.

In answer to yours of the 20th ult. I would say that this company has for some 10 or 12 months past been using "Ray's India-rubber Springs." We have applied them to both passenger and freight cars with uniform success. They have invariably preserved their elasticity and consistency through all the extremes of weather; and we are now applying them whenever the steel spring fails. I am well satisfied that they are particularly adapted for railroad purposes.

Very respectfully yours,
GEO. HAVEN,
Supt. Fall River Railroad.

Supt. Office N.Y. & H. R.R.,
New York, March 8, 1850.

This is to certify that we have used the Rubber Springs manufactured by Mr. F. M. Ray for the past twenty months, "both for Passenger and Freight Car Springs and Bumpers, and of different sizes," and have in every case given entire satisfaction, and I consider them the best spring now in use

M. SLOAT, Supt.

—

Jersey City, March 9, 1850.

This is to certify that the present form of Mr. F. M. Ray's India-rubber Car Spring I consider far superior to the form of Disk, having used both forms.

I take pleasure in recommending these springs to all railroad companies. DAVID H. BAKER,
Foreman of Car Shop of N.J. R.R. & Trans. Co.

—

Harlem R.R. Depot,
New York, March 7, 1850.

This is to certify that we have used Mr. F. M. Ray's India-rubber Springs for over eighteen months, and find them to be easy and durable, and recommend them to railroad companies as being superior to anything we have tried. J. M. SMART,
Foreman at 42d St. Depot.

—

Office of the New Jersey Railroad Co.,
Jersey City, March 7, 1850.

This is to certify that we have had Mr. F. M. Ray's India-rubber Springs in constant use under our cars, and as Bumper Springs for upwards of two years, and they have in every way given perfect satisfaction.

The present form of spring we deem far superior to the form of Disk, having used both forms, although we have none of those made in Disks at present in use.

We take pleasure in recommending these springs to all railroad companies.

J. P. JACKSON, Vice Prest.
New Jersey Railroad and Trans. Co.

—

Roxbury, February 28, 1850.

In compliance with your request, I take great pleasure in stating the result of my experience in the use of "Ray's Patented Vulcanised India-rubber Car and Engine Springs." We have used them nearly two years, and never had one fail in any way. The *cold weather* does not affect *them*, as it has *other* rubber springs we have used.

With sixteen years' experience as superintendent of machinery on the Boston and Providence railroad, I take pleasure in saying that your springs are the best we ever used, or I ever saw used elsewhere. We have 20 cars rigged with them, of which I can say that the springs are as good now as when first applied. I put 24 lbs. of the rubber under the forward end of one of our heaviest engines, taking off 250 lbs. of steel springs—it has been in use 18 months, and is in as good condition now as when first put under the engine.

Very respectfully yours,
GEO. S. GRIGGS,
Supt. of Machinery, Boston and Prov. R.R.

—

Boston, March 5, 1850.

In answer to your enquiry about India-rubber Springs, I have to say that we have used them to a considerable extent on both freight and passenger cars, and also on several of our tenders; and I am very well satisfied that they answer all the purposes for which they are intended. I believe the India-rubber will soon supersede all other springs for cars and tenders. Yours truly, S. M. FELTON,
Supt. Fitchburg Railroad.

—

New York, March 11, 1850.

I have used the Patent India-rubber Spring purchased of Mr. Ray, upon the cars of the New York and New Haven Railroad, and have found them efficient and economical; and when applied to the axles and draw springs, believe them to be quite equal to any in use. I have found a combination of these springs with a steel spring under the transom beam a very satisfactory arrangement, and am now using this plan in all new cars. Yours respectfully,
ROBERT SCHUYLER.

—

February 25, 1850.

From practical observation of the use of the India-rubber Car Springs, manufactured and sold by your company, we are entirely satisfied in their application, and do not hesitate to recommend them as elastic, durable, requiring no repairs for years, and retaining their consistency during all extremes of weather. We have applied them for the past two years, and consider them superior for all railroad purposes.

Yours truly,
OSGOOD BRADLEY, Car Builder, Worcester.
T. & C. WASON, do. Springfield.
DEAN, PACKARD & MILLS, do. do.
DAVENPORT & BRIDGES, do. Cambridgeport.

Office New Jersey Railroad Co.,
Jersey City, March 8, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: In answer to your enquiries respecting the operation of the Vulcanised Rubber Springs, purchased by our company from you some two years since, I reply that they are superior to any spring in use, (that I have either seen or heard of).

The improved form of your spring, consisting of a solid piece of vulcanised rubber with bands on the outside, is far superior to your first form, consisting of disks of rubber with metallic plates interposed.

The last named form was tried, if you recollect, at a much earlier period; and then was replaced by your last form.

I have no hesitation in saying that your springs have given entire satisfaction, and most cheerfully recommend them to railroad companies throughout the country for the following reasons:

1st. The cost is 30 per cent. less.

2d. Saving of weight on each car of 8 wheels from 700 to 800 lbs.

3d. Less care and attention is required, as they are not liable to get out of repair.

4th. A great saving is secured in the wear and tear of the cars and rails from their great elasticity.

5th. The freedom from noise.

6th. There is greater safety in case of accident, as they cannot be broken.

7th. The comfort of passengers is enhanced sufficiently to pay the expense, waiving all the other reasons that I have given.

Should this fail to satisfy any person enquiring, you are at liberty to refer to me, No. 150 Washington St., Jersey City. Yours respectfully,

T. L. SMITH, Supt.

—

Old Colony Railroad Office,
Boston, March 6, 1850.

EDWARD CRANE, Esq.,
President New England Car Co.,

Dear Sir: In compliance with your request I would state that the Old Colony Railroad Comp'y have had in use upon tneir road, India-rubber Springs furnished by your company, for more than eighteen months past, during which time they have been extensively used under Passenger and Freight Cars, Locomotive Tenders, and for Drawer and Buffing Springs, with the most perfect success. The elasticity and consistency of the Rubber has never been unfavorably affected by either extremes of heat or cold—and from the experience which we have had in the use of Rubber Springs, I think them well adapted for railroad purposes—and therefore we have for some months past used Rubber almost exclusively, in all places where springs are required.

Respectfully yours, etc.,
JAS. H. MOORE,
Supt. O. C. Road.

—

Troy, February 27, 1850.

We have been using your India-rubber Car Springs for nearly two years—and we take pleasure in saying that in our opinion the rubber has to a certain extent already, and may eventually entirely suspersede all other Springs for Railroad Car purposes. We now use it entirely for Draw Springs and Bumpers, considering it better and lighter than steel.

During our two years' experience in the use of it, we have not known any to lose their elasticity, or fail in any way; and we cheerfully recommend the rubber for railroad car springs. Very respectfully,

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1m14

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This book has been compiled somewhat on the plan of Bradshaw's Guide, with such improvements in size, form and arrangement as have seemed desirable; and the publisher confidently hopes it will not be found liable to the objections of incompleteness and incorrectness, which have been made, and justly too, against various other similar works heretofore issued.

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Boston, March 23, 1850. 6m13

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Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W, H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

Roebling, John A.,
Trenton, N. J.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Sours, Peter,
Rahway, New Jersey.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
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" E. Pratt & Brother, Baltimore.
John Barstow, Esq., Providence.
Lewis Bullard, Esq., Boston.
February 9, 1850. 6m*

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July, 27, 1849.

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Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

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SAFETY AND ECONOMY.

NORRIS' LOCOMOTIVE WORKS,
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Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.

May 16, 1849.

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S. C. H.'s arrangements with several machine shops are such that he can supply, at very short notice, large quantities of machinery.

November 23, 1849.

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Manufacture of Patent Wire ROPE AND CABLES,

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Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.

New York, March 26, 1850. 3m

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent*,
Albany Iron and Nail Works.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
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New York, November 17, 1849.

Railroad Iron.

1,500 Tons weighing 58 lbs. per lineal yard.
500 " " 57 " "
500 " " 56 " "
500 " " 60 & 61 lbs, "

Also 2½x½ flat rails. All the above being of approved patterns. For sale by
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N.B.—Rails imported on commission, or at a fixed price.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns' for sale by
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IRONDALE PIG METAL, MANUFACTURED and for sale by the Bloomsburg Railroad Iron Co.
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Railroad Iron.

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COLLINS, VOSE & CO.,
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New York, November 17, 1849. 1m46

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1675 Tons, weighing about 61 lbs. per yard, 90 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
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New York, Feb. 25, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the Unitad States.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited. COOPER & HEWITT,
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February 15, 1850.

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Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES. — The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, *Agent*.
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt, & Co., New York; E. Pratt & Brother, Baltimore, Md.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,

February 3, 1849. New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.

August 16, 1849. 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,
45 North Water St., Philadelphia.

March 15, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP
In complete operation, are prepared to execute faithfully and promptly, orders for
Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

American and Foreign Iron.

FOR SALE,

300	Tons	A 1,	Iron Dale	Foundry Iron.
100	"	1,	"	"
100	"	2,	"	"
100	"	"	Forge	"
400	"	Wilkesbarre	"	"
100	"	"Roaring Run"	Foundry	Iron.
300	"	Fort	"	"
50	"	Catoctin	"	"
250	"	Chikiswalungo	"	"
50	"	"Columbia" "chilling" iron, a very superior article for car wheels.		
75	"	"Columbia" refined boiler blooms.		
30	"	1 x ¼ Slit iron.		
50	"	Best Penna. boiler iron.		
50	"	"Puddled" "		
50	"	Bagnall & Sons refined bar iron.		
50	"	Common bar iron.		

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,
New York. 64 South street

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale. *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blas.* Charcoal Pig Iron from the *Cloverdale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.

Baltimore, June 14, 1849. 6 mos

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
6m9 62 Buchanan's Wharf, Baltimore.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150	tons	No. 1 Boonton	Foundry	Pig Iron.
100	"	No. 2 do.	do.	do.
300	"	Nos. 2 & 3 Forge	do.	do.
100	"	No. 2 Glendon	do.	do.
140	"	Nos. 2 & 3 Lehigh Crane	do	do.
100	"	No. 1 Pompton	Charcoal	do.
100	"	New-Jersey Blooms		
50	"	New-Jersey Faggoting Iron, for shafts		

Best Bars, ½ to 4 inch by ½ to 1 inch thick.
Do do Rounds and Squares, ½ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, ½ to 1 in. Ovals & Half Ovals ½ to 1½ in.
Bands, 1½ to 4 inch. Hoops, ½ to 2 inch.
Trunk Hoops, ½ to 1½ in. Horse Shoe & Nut Iron.
Nail Plates. Railroad Spikes.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES,

which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.
November 23 1849.

Railroad Iron.

OF ANY PATTERN AND WEIGHT,
Of a Favorite Brand,
And deliverable in Bond, or Duty paid, at any Port of the U. S., contracted for on favorable terms, by

CHARLES ILLIUS,
20 Beaver St., New York.

Pig and other Iron also contracted for. Sole Agent for "*Baxter's Machine and Burning Oil*"—particularly adapted for "*Railroads*" and other Machinery—Preferred to Sperm by the many now using it, and 25 *per cent. cheaper*.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Ogden & Martin's ROSENDALE CEMENT.

WE are prepared to enter into arrangements for supplying our Cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, setts immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, at their office by OGDEN & MARTIN, 104 Wall st.
February 16, 1850. 1y*

The above cement is used in most of the fortifications building by government.

To Steam Engine Builders.

THE Undersigned offer for sale, *at less than half its cost*, the following *new machinery*, calculated for an engine of 62 inches cylinder and 10 feet stroke, viz.

2 Wrought Iron Cranks, 60 inches from centre to centre.
1 Do. do. Connecting Rod Strap.
2 Do. do. Crank Pins.
1 Eccentric Strap.
1 Diagonal Link with Brasses.
1 Cast Iron Lever Beam (forked).

The above machinery was made at the West Point Foundry for the U. S. Steamer Missouri, without regard to expense, is all finished complete for putting together, and has never been used. Drawings of the cranks can be seen on application to

HENRY THOMPSON & SON,
No. 57 South Gay St., Baltimore, Md.
Sept. 12, 1849.

P. H. Griffin,

Corner of Steuben and James Sts. Albany, N.Y.,

CONTINUES to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.

Orders promptly attended to. 1y14

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and *warranted to perform well*. Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price $1,500.

Address J. B. MOORHEAD,
Frazer P.O., Chester county, Pa.

P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia.
September 6, 1849.

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands*. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,
Prest. Beaver Meadow Railroad & Coal Co.,
Philadelphia.
or, L. CHAMBERLAIN, Sec'y,
at Beaver Meadow, Pa.
May 19, 1849. 20tf

Rosendale Cement.

THE NEWARK AND ROSENDALE LIME AND CEMENT CO. are now manufacturing at their works in NEWARK, N. J., and Ulster county, N.Y., a very superior article of *Hydraulic Cement*—also Lime Calcine Plaster, etc. Contractors and dealers will find it to their advantage to call or make application before purchasing elsewhere. All communications addressed to the subscriber, at Newark, N.J., will be punctually attended to.

1y*15 HENRY WILDE, Secretary.

Fire Brick.

THE Subscribers have constantly on hand Rafford's Stourbridge, Oak Farms Stourbridge, Lister, Wortley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

ROOFING SLATES,

from the best Welch quarries, and of all sizes. Also,

COAL,

of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., etc., for sale at the lowest market price. Apply to

SAMUEL THOMPSON & NEPHEW,
275 Pearl and 43 Gold Sts., New York.

November, 23, 1849.

Ballard's Improved JACK-SCREW.

PATENTED.

THE ADVANTAGES OF THIS Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires.

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler Makers have them in use—by whom they are highly recommended.

JACK SCREWS,

of various sizes, power and price, constantly on hand at the manufactory.

No. 7 Eldridge Street,
near Division Street.

New York, Jan. 19, 1850.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

F. & T. TOWNSEND.

Albany, August 18, 1849.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others. J. L. BROWN.

☞ Bank Scales made to order, and all Scales of his make Warranted in every particular.

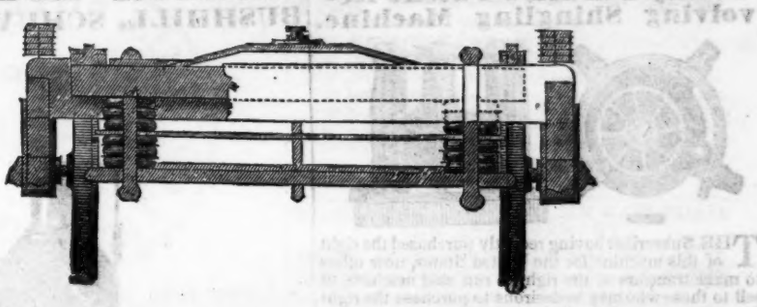
References given if required. 4tf

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats. Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
President of the Newcastle Manuf. Co.

FULLER'S PATENT INDIA RUBBER CAR SPRINGS.



RAILROAD COMPANIES are cautioned, before purchasing Springs, to examine the actual patents and judge for themselves.

Persons, under the Title of the New England Car Company, seeking fraudulently to invade Fuller's rights have put forth so many statements for the purpose of misleading the public, that an enumeration of some facts is absolutely necessary, for the purpose of putting persons interested upon their guard.

Fuller's patent is for the application of Discs of India-rubber with Metal Plates, for forming Springs for Railway Cars and Carriages—either one disc and two plates, or ten discs and plates, or any other number, are equally covered by the patent. Fuller is not bound to the use of short discs—he may use long discs and plates.

Ray's patent is simply and wholly the forming of air tight rubber cylinders, with hoops or bands round the outside, and the combination of elasticity of India rubber, with the elasticity of atmospheric air confined in the cylinder, and in no part of his patent is he authorised to use the form of spring which he is now fraudulently supplying to Railroad Companies. Such springs are direct and positive infringements of the very letter of Fuller's patent.

Fuller's patent is dated October, 1845, Ray's patent, August, 1848.

The spring patented by Ray never has been put in operation, and never can be made useful for Railroad cars.

A mere experiment, even if made, it is well known does not prove an invention; and it is ridiculous for such parties to hope to mislead the Presidents and Superintendents of Railroad companies, by claiming the invention because Ray alledges he made an experiment—which Fuller had made before him—had actually brought into working order, and obtained a patent for—and this too before Mr. Ray states he made his experiment—and that experiment not claimed to have been applied to a car or carriage.

Besides, the invention could not have been developed until India rubber, properly Vulcanised, could be made of a sufficient thickness. In the United States the art of vulcanising rubber by steam heat, (by which means only can a body of rubber having any considerable thickness be vulcanised,) was not introduced until after the grant by the American government of the patent for springs to Fuller—whereas the process of vulcanising rubber by steam heat was invented in England about three years previously, and was used by Fuller there. This fact refutes entirely the claim of invention put forth by Mr. Ray, and proves the impossibility of his pretensions being true.

Fuller was the first and only inventor of the spring. A Mr. Dorr, whose connection with Mr. Goodyear is well known in this country, applied in England to Mr. Fuller, after he had published and patented his invention, and introduced another party for the purpose of obtaining the agency for the United States. They were furnished with a complete set of drawings and models, and with instructions to make arrangements for the supply of material of American manufacture—from that hour to the present not a single communication has been received from them. Some of these identical models have been traced into the hands of parties now seeking to invade Fuller's rights, and who have exhibited them as specimens of their own invention.

After this, the conveyance was made by Goodyear to certain parties here for the use for railroad springs of what he calls his Metallic rubber. Comment is unnecessary.

There are 5 or 6 different processes for the manufacture of vulcanised rubber, patented by as many different parties, some here, some in England, either of which would probably make good springs.

A large and powerful company has been organised under [illegible] agent, the particulars of which shall be given v[illegible]y.

An action has been commenced against three railroad companies for infringement; and all other parties will assuredly be prosecuted if they continue farther to infringe upon Fuller's patent.

W. C. FULLER,

The only persons authorised to supply the Springs are G. M. KNEVITT, 38 Broadway, N. York,
General Agent for the U. S.: and
JAS. LEE & Co., 18 India Wharf, Boston.
JOHN THORNLEY, Chestnut st., Philad.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.

New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents, { FAIRBANKS & Co., 91 Water St., N. York.
A. B. NORRIS, 196 Market St. Philadelphia.

April 22, 1849. 1y*17

Patent India Rubber Steam Packing.

THIS article, made by the subscriber, who alone is authorised to make it, is warranted to stand as high a degree of heat *as any that has been or can be made by any person*—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thicknesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc. at the warehouse. JOHN GREACHEN, JR.,
98 Broadway, opposite Trinity Church.

New York, October, 1849.

Ibbotson, Brothers & Co's CELEBRATED CAST STEEL AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY J. IBBOTSON, Agent,
218 Pearl st., New York.

February 25, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has give universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

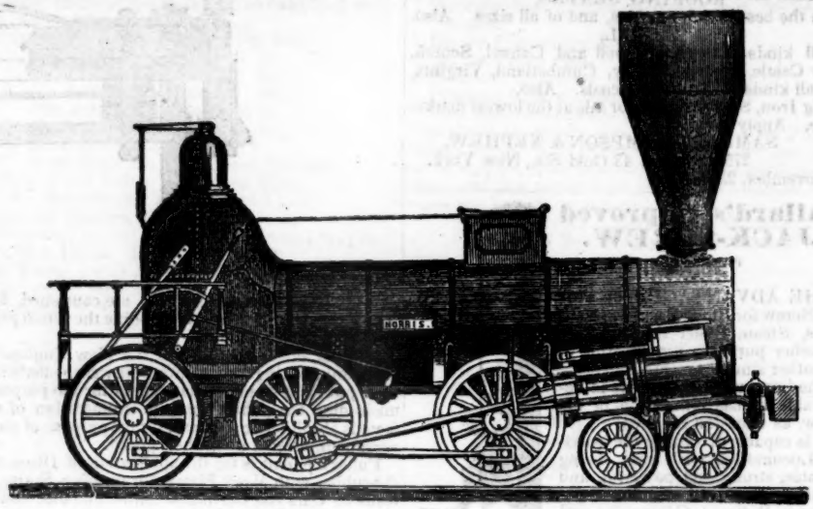
A. TIERS,
Point Pleasant Foundry.

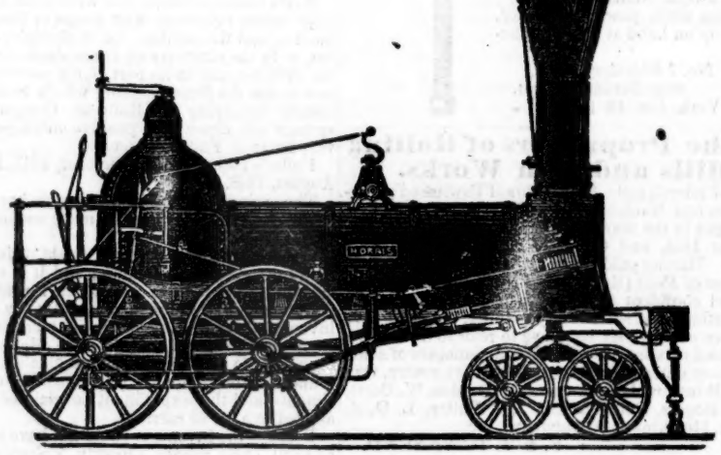
He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general asssortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

COLUMBUS, OHIO,

Railroad Car Manufactory.

RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited. 1y8

To Inventors and Patentees.

OWEN G WARREN, ARCHITECT, Has had many years' experience as Agent for obtaining Patents, both in this country and Europe, and will transact such business promptly and reasonably. Persons at a distance can have their business done by correspondence—without the necessity of visiting this city or Washington. Office No. 94 Merchants Exchange, Wall st., corner of Hanover st., up stairs. 1y3

MR. HALE:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Spaings upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanised India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most fo the other roads terminating in this city."

And yet Mr. Knevitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.
F. M. RAY, Agent, New York.

Boston, May 8, 1849.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS,
Reading, Pa.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

NORRIS' LOCOMOTIVE WORKS, SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by

E. S. NORRIS.

April 11, 1849.

Hydraulic Cement.

KINGSTON LIME AND CEMENT CO. ~ OFFICE 271 PEARL-ST. N. Y.

HYDRAULIC CEMENT, OF BEST QUALITY, manufactured at their works, for sale in lots to suit purchasers.

Also, Ground Lime, a superior article for Builders.

ISAAC FRYER, Sec'y.

January 19, 1850. 1y

Engine and Car Works, PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of $250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

RAILROADS.

EASTERN RAILROAD.

WINTER ARRANGEMENT.

On and after Monday, October 8, 1849, trains leave Boston daily (Sundays excepted);

For Lynn, 7, 8½, 10 a.m., 12½, 2½, 4, 4½, 6½, p.m.
Salem, 7, 8½ 10, a.m., 12½, 2½, 4, 4½, 6½, p.m.
Manchester and Gloucester, 10 a.m., 4 p.m.
Newburyport, 7, a.m., 12½, 2½ 4½, p.m.
Portsmouth, 7, am., 2½, 4½, pm.
Portland, Me., 7, am., 2½, pm.

And for Boston,

From Portland, 8½ am., 4 pm.
Portsmouth, 7, 10½*, am., 6½*, pm.
Newburyport, 7½, 11½*, am., 3½ 7*, pm.
Gloucester, 7½, am., 1½pm.
Manchester, 8 am., 2 pm.,
Lynn, 7½, 8½*, 9½*, 10½ am., 12 55*, 2½* 4½* 8½* pm.
Salem, 7½, 8½*, 9*, 10½ am., 12 40*, 2½* 4½,* 8*, pm.

* *Or on their arrival from the East.*

Freight trains each way daily. Office 17 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ALBANY AND BUFFALO RAILROADS.—Four Trains daily, Sundays excepted, viz:

Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m.
Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours.
Arrive from Buffalo, 7 p.m., 2½ a.m., 12½ m., 3½ p.m.

Passengers by the *Express Train* reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall,

Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12½, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The *Eastern Trains* leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage *free* between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y
Albany and Schenectady Railroad Co.

Albany, August, 1849.

BOSTON AND MAINE RAILROAD.

Winter Arrangement, 1850.
Outward Trains from Boston

For Portland at 7 am. and 2½ pm.
For Rochester at 7 am., 2½ pm.
For Great Falls at 7 am., 2½, 3½ pm.
For Haverhill at 7 and 9½ am., 2½, 3½, 5½, pm.
For Lawrence 7, 7½, 9½ am., 12m. 2½, 3½, 4½ 5½, pm.
For Reading 7, 9½ am., 12m. 2½, 3½, 4½, 5½, 7½, 9½ pm.
For Medford 7½, 9½ a.m., 12½, 2½, 5, 6½, 9½ p.m.
The Station in Boston is on Haymarket Square.

CHAS. MINOT, Super't.

January 10, 1850.

NEW YORK AND HARLEM RAILROAD. NEW ARRANGEMENT.

On and after Wednesday, October 17th, 1849, the Cars will run as follows, (Sundays excepted) until further notice:

Trains will leave the City Hall, New York, for—
Harlem and Morrisania at 6½, 8, 10, 11, 12 am., 2, 3½, 4, 5, 6½ pm.
New Village, at 8½, 10, 12 am., 3½, 5, 6½ pm.
Fordham and Williams' Bridge, at 8½, 10, 12 am., 2½ 3½, 5, 6½ pm.
Hunt's Bridge, Underhill's and Hart's Corners, at 8½, 10 am., 3½, 5 pm.
Tuckahoe and White Plains, at 8½, 10 am., 2½, 3½, 5 pm.
Pleasantville, New Castle, Bedford, Mechanicsville, Purdy's, Croton Falls, and intermediate stations, on signal, 8½ am., 2½, 3½ pm.
Brewster's, Towner's, Patterson, Paulding's, South Dover, Dover Furnace, and Dover Plains, 8½ am., 2½ pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave
Harlem and Morrisiana at 6 08, 7½, 8 37, 9, 10 6, 12 am., 1 43, 3 07, 3½, 5, 5 47 pm.
New Village, at 5 58, 8 27, 9 56 am., 1 33, 2 57, 5 36 pm.
Fordham and William's Bridge at 5½, 8 14, 9 43, 10 57 am., 1 20, 2 44, 5 24 pm.
Hunt's Bridge at 8 04, 9 33 am., 2 34, 5 16 pm. On signal.
Underhill's, at 7 56, 9 23 a.m., 2 26, 5 10 p.m. On signal.
Tuckahoe at 7 53, 9 18, 10 40 am., 2 23, 5 08 pm.
Hart's Corners at 7 38, 9 03 am., 2 08, 4 54 pm.—On signal.
White Plains at 7½, 8 55, 10 20 am., 2, 4 47 pm.
Davis' Brook at 8 40, 10 11 am., On signal. 4 39 pm. On signal.
Unionville, 8 27, 10 11 am. On signal. 4 29 pm.—On signal.
Pleasantville at 8 20, 9 56 am., 4 24 pm.
Champaqua, at 8 10, 9 50 am. On signal. 4 18 pm. On signal,
New Castle, at 7 56, 9 38 am.. 4 07 pm.
Bedford at 7 46, 9 32 am., 4 02 pm.
Mechanicsville at 7 36, 9 22 am., 3 52 pm.
Golden's Bridge, 7 28, 9 17 am. On signal, 3 47 p m. On signal.
Purdy's at 7 20, 9 09 am., 3 39 pm.
Croton Falls, at 7½, 9 04 am.,3 34 pm.
Brewster's, at 8 50 am., 3 20 pm.
Towner's, at 8 35 am., 3 05 pm.
Paterson, at 8 27 am., 2 57 pm.
Paulding's, at 8 17 am., 2 47 pm.
South Dover, 8 02 am., 2 32 pm.
Dover Furnace, 7 55 am., 2 25 pm.
Dover Plains, at 7 45 am., 2 15 pm.

The trains for Harlem and Morrisiana leaving City Hall at 6½, 8, 10, 11, 12, 2, 4 and 6½, returning from Morrisiana and Harlem at 6 08, 7½, 9, 12, 1 43, 3 07, 3½ and 5 o'clock, will land and receive passengers at 27th 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th and 132d streets.

The Dover Plains train from New York at 2½ pm., returning leaving Dover Plains at 7½ am., will not stop between White Plains and New York, (except at Tuckahoe, Williams' Bridge and Fordham,) unless to leave passengers coming from above Croton Falls.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 27th street.

Freight Trains leave New York at 1 o'clock pm.—Returning, leaves Dover Plains at 12 o'clock m.

For Sunday Aarrangements, see hand bills.

M. SLOAT, Sup't.

NEW YORK AND ERIE RAILROAD. OPEN TO ELMIRA.

On and after the 8th of October, the trains will run as follows, (Sundays excepted):

THROUGH PASSENGER TRAINS from New York to Elmira, will leave the Company's Pier at the foot of Duane street, at 7 o'clock a.m. and 5 o'clock p.m. stopping at all the way stations.

From Elmira the through trains will leave for New York at 5 o'clock a.m. and 6½ p. m., stopping also at all the way stations.

A SPECIAL WAY TRAIN, for Port Jervis and intermediate stations, except Sufferns, will leave New York every Saturday at 3 p. m., and will leave Port Jervis for New York every Monday morning, at 4 55 o'clock.

A MILK TRAIN, with Passenger Cars attached, will leave Port Jervis for New York at 3 o'clock a.m. and returning will leave New York for Port Jervis at 3 p.m. Another milk train with passenger car, will leave Piermont for Otisville at 9 am., and returning leave Otisville at 4 55 p.m., connecting with the freight boats to New York. The milk trains do not connect with the P. and R. railroad.

FREIGHT.—Freight leaves New York every night for all the regular stations on the road. A freight train will leave Elmira every morning at 3 20 o'clock a.m. —A freight train will leave Port Jervis for New York every morning at 5 o'clock, and another at 8 a.m. with market freights.

A Special Train for cattle and other live stock, will leave Elmira on Tuesdays and Fridays at 12 20 p.m.; and from Port Jervis, for New York, on Wednesdays and Saturdays, at 8 40 a.m.

FARE from New York to Elmira $5 75. The intermediate stations in proportion.

COMMUTATION TICKETS, at lower rates, for the stations between New York and Port Jervis, can be purchased at the New York and Piermont offices.

The Steamboat ERIE leaves New York for Piermont every day at 3 o'clock, and returns on the arrival of the train from Elmira, arriving at New York at about 7½ p.m.

JAMES P. KIRKWOOD, Superintendant.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

		Between Augusta and Dalton.	Between Charleston, and Dalton.
		271 miles.	408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot	$0 18	$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
	Cotton, per 100 lbs.	0 45	0 70
	Molasses per hogshead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton.

F. C. ARMS,
44*1y Sup't of Transportation.

LITTLE MIAMI RAILROAD.—SUMMER ARRANGEMENT.

CINCINNATI & SANDUSKY.

FIRST Passenger Train leaves Depot on East Front street, at 5 o'clock 10 minutes A. M. stops for breakfast at Morrow, and arrives at Springfield at 11 10 A. M. Leaves Springfield for Sandusky at 11 50 A. M.

Second Passenger Train leaves Depot 3 P. M. arrives at Springfield at 9 P.M. Passengers take tea at Springfield, and leaves for Sandusky at 9¼ P. M.

RETURNING—First Train leaves Springfield at 4 A. M. Stop for breakfast at Xenia, and arrives at Cincinnati at 10 15 A. M.

Second Train leaves Springfield at 2¼ P. M. Stop for tea at Morrow, and arrives at cincinnati, at 8¼ P. M.

Passengers taking the Morning Train arrive at Sandusky at 9 P. M. Those taking the Afternoon Train arrive at 7¼ A. M. next morning, and proceed directly on in the boats.

Passengers for columbus, Zanesville, Wheeling, and intermediate towns, should take the 5, 10 A. M., Train.

The Ohi Stage Company are running the following Lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 3 o'clock, pm. Train from Cincinnati.

Fare from Cincinnati to Xenia	-	-	$1 90
Do	do	Springfield -	- 2 50
Do	do	Sandusky City	- 6 50
Do	do	Buffalo -	- 10 00
Do	do	Columbus -	- 4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENT, Superintendent.

☞ The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value above that amount.

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.
April 1st, 1849.—Fare $3.

Leave Philadelphia 8½ am., and 10 pm.
Leave Baltimore 9 am, and 8 pm.
Sunday—Leave Philadelphia at 10 pm.
" " Baltimore at 8 pm.
Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, $20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, $12.
" " Wheeling, 13.
Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 pm.
Leave Wilmington at 7¼ am., 4¼ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2¼ pm.—Baltimore at 1¼ pm
Fare $3.—Second class, $2.
N.B.—Extra baggage charged for.

I. R TRIMBLE, Gen. Supt.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare.

Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leave Baltimore at - - - -	9 am. and 3½ pm.
Arrive at - - - - -	9 am. and 6½ pm.
Leave York at - - - -	5 am. and 3 pm.
Arrive at - - - - -	12¾ pm. & 8 pm.
Leave York for Columbia at	- 1¼ pm. & 8 am.
Leave Columbia for York at	- 8 am. & 2 pm.

Fare:

Fare to York - - - -	$1 50
" Wrightsville - - - -	2 00
" Columbia - - - -	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg - - - - - - -	$9
Or via Lancaster by railroad - - -	10
Through tickets to Harrisburg or Gettysburg -	3
In connection with the afternoon train at 3¼ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at - -	5¼ pm.
Returning, leaves Owing's Mills at - -	7 am.

D. C. H. BORDLEY, Sup't.
31 1y Ticket Office, 63 North st.

PHILADELPHIA & READING RAILROAD. Passenger Train Arrangement for 1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock am.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 am.

Fares.	Miles.	No. 1.	No. 2
Between Phila. and Pottsville,	92	$3.50 and	$3.00
" " Reading	58	2.25 and	1.90
" Pottsville "	34	1.40 and	1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf.

BALTIMORE AND OHIO RAILROAD AND WASHINGTON BRANCH.

On and after January 1, 1850, Passenger Trains will run as follows:

Leave Baltimore for Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg, Hancock and Cumberland, every morning at 7½ o'clock. This line carries the Great Mail, and connects with Post Coaches at Cumberland, for Wheeling and Pittsburg, over the National Road. Also with the Winchester Trains, at Harper's Ferry. N.B.—Passengers for Pittsburg take the steamers of the Monongahela slack water navigation at *Brownsville*, only 76 miles from Cumberland.

Leave Baltimore for Ellicott's Mills, Frederick and Harper's Ferry, daily, except Sunday, at 4½ p.m.

Leave Baltimore for Washington City, daily, at 6 a.m. and 5 p.m.—daily, except Sunday, at 9 a.m. The early train connects with the Great Southern Line, via Fredericksburg and Richmond, to Charleston.

Leave Cumberland for Baltimore, etc., at 8½ a. m., daily, connecting with the train from Winchester at Harper's Ferry—with the Evening Train to Washington City, at the Relay House—and with the Evening Train to Philadelphia, at Baltimore. Time for arriving at Baltimore, 5½ p.m.

Leave Harper's Ferry for Baltimore, daily, except Sunday, at 7½ a. m—taking in Passengers who leave Frederick at 8½ a.m.

Leave Washington for Baltimore, daily, at 6 a.m. & 5½ p.m., and *daily, except Sunday*, at 9½ a. m. The early train connects at the Relay House with the morning line to Cumberland and the West, and at Baltimore with the day line to Philadelphia and New York.

Through tickets are sold at *Philadelphia and Baltimore* for Pittsburgh and Wheeling, and at *Philadelphia and New York* for Charleston, S. C., at the following RATES OF FARE.

	To Pittsburg. In winter.	Summer.	Wheeling. Win.	Sum.	Charleston.
From Philadelphia,	$13	$12	$14	$13	$20
" Baltimore,	11	10	12	11	
" New York,					20

Passengers leaving New York not later than the afternoon line via Newark, etc., reach Baltimore in season to take the next morning's lines to the South and West.

Passengers leaving Cumberland in the morning and Washington in the evening lines, reach Baltimore in season to proceed to Philadelphia by the evening train at 8 p. m.—so as to reach New York before noon the next day.

An Emigrant line by burthen cars, leaves Baltimore every morning, except Sundays, at 4 o'clock—connecting with a line of the previous day from N. York—and at Cumberland with a wagon line to Pittsburg or Brownsville and Wheeling. Fare by this line:

From New York to Pittsburg,	$8 00
" Philadelphia "	6 50
" Baltimore "	5 00

By order, J. T. ENGLAND, Agent.

SOUTH CAROLINA RAILROAD.—A PASSENGER Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily - - - - - - $26 50

Fare through from Charleston to Huntsville, Decatur and Tuscumbia - - - - 22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

LAKE SUPERIOR LINE.
Cleveland and Detroit,

TO

SAULT STE. MARIE, CARP RIVER, COPPER HARBOR, EAGLE RIVER, ISLE ROYAL, ONTONAGON AND LA POINT.

The Proprietors of this line having added largely to their facilities for transportation on this route, will be prepared to ship Goods to any part of Lake Superior during the coming season, and contract for the delivery of Copper Ore to either Boston, New York, or Pittsburg, being connected with the Troy and Western Line, from Detroit to New York, and a Daily line of Canal Boats

FROM CLEVELAND TO PITTSBURG.

Lakes Huron and Erie.

For this portion of the route, the Proprietors are fitting up a large Boat, with a powerful low pressure engine, and a spacious upper cabin, with state rooms, to take the place of the Franklin, which will leave CLEVELAND every *Monday Evening* at 7 o'clock, and DETROIT every *Tuesday Afternoon* at 2 o'clock, going to MACKINAW and the BRUCE MINES, and arriving at SAULT STE. MARIE on Thursday morning. The Franklin will leave Detroit every Friday for Mackinaw and Sault Ste. Marie, via the Bruce Mines. For the transportation of heavy masses of *Copper*, a Propeller will make trips as occasion may require.

Lake Superior.

Mr. McKnight, one of the Proprietors, is constructing a Wharf to the Channel Bank, at the head of the Portage, which will enable them to load their Propellers, NAPOLEON AND INDEPENDENCE, with but 24 hours' detention at Sault Ste. Marie. One of the Propellers will leave every *Friday*, making a trip through the Lake, touching at Carp River, Ontonagon and Isle Royal.

The great expense incurred in building wharves to facilitate business, it is hoped, will entitle the Proprietors of this Line to Patronage. Goods shipped by either G. WILLIAMS & CO., or S. P. BRADY, Agents, Detroit, will be receipted through to their destination on Lake Superior. Letters addressed to S. McKNIGHT, Detroit, or Sault Ste. Marie, will receive attention. Supplies will be purchased and delivered at any point on Lake Superior, on the best possible terms, and all orders filled with articles of as good quality as the market affords.

Canada Line.

To facilitate the forwarding of Goods for the Canada Companies, a connection has been made with PARK & CO., managing owners of the Propeller *Earl Cathcart*, forming a direct line from Montreal to the Bruce Mines and Sault Ste. Marie. Goods sent by this line, care of PARK & CO., Amherstburg, or CHAS. HUNT, Esq., Windsor, will be immediately forwarded, and at prices decidedly to the advantage of parties in Toronto or other Canadian Ports.

S. M'KNIGHT,
J. R. LIVINGSTON,
P. B. BARBEAU.

January, 1850.

AGENTS.

G. Williams & Co., } Detroit.
S. P. Brady, }
P. L. Sternberg & Co., Buffalo.
Charles Hunt, Windsor.
Park & Co., Amherstburg.
W. A. Otis & Co., } Cleveland.
Crawford and Chamberlain, }
Rice, Clapp & CO., New York.
W. M. Gorrie, Toronto.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, *Patterson, N. J.* The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N.J. or 74 Broadway, New York.

CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190¼ miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.
Passenger trains arrive daily at Savannah, 6 15 p.m.
" " " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391¼ miles in length* from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,		$5 75
" " "	Atlanta,	9 50
" " "	Augusta,	6 50
" " "	Columbus,	15 00
" " "	Opelika,†	17 00
" " "	Jacksonville, Ala.,	20 00
" " "	Talladega, }	
" " "	Huntsville } Ala.,	22 00
" " "	Decatur, }	
" " "	Tuscumbia, Ala.,	22 50
" " "	Tuscaloosa, Ala.,	
" " "	Columbus, Miss, }	
" " "	Aberdeen, " }	28 00
" " "	Holly Springs }	
" " "	Nashville, Tenn. }	
" " "	Murphreesboro' }	25 00
" " "	Columbia, do., }	
" " "	Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steam-ships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York.

Stages for Tallahasse and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus a distance of 97 miles, or from Griffin thro' West Point, a distance ot 93 miles.

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* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423¾ miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about $2.

RATES OF FREIGHT FOR MERCHANDIZE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot - -	13 cents.
Crockery Ware, in crates, boxes or hhds, per cubic foot. - - - -	10 "
Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs.,	50 "
2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs., - - - -	45 "
3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs.,	40 "
4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb.	30 "
Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each,	75 "
Oil and molasses per hhd., (smaller casks in proportion) - - -	$6 00 "
Salt per sack not exceeding 4 bushels, -	50 "

☞ Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission.

WM. M. WADLEY, Supt.

Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, near Third, below Walnut, Philadelphia.

GREAT NORTHERN & SOUTHERN MAIL ROUTE. From New York to Charleston, S. C. daily, via *Philadelphia, Baltimore, Washington City, Richmond, Petersburg, Weldon and Wilmington, N. C.*

Travellers by this route, leaving New York at 4½ p. m., Philadelphia at 10 p.m., and Baltimore at 6 a.m., proceed without delay at any point on the route, arriving at Richmond, Va., in a day, and at Charleston, S. C., in two and half days from New York.

Through tickets from New York to Charleston, $20 00
" " Baltimore to Richmond, 7 00
" " " " Petersburg, 7 50

For tickets to Richmond and Petersburg, or further information, apply at the *Southern Ticket Office, adjoining the Washington Railroad Ticket Office, Pratt Street, Baltimore.*

STOCKTON & FALLS.

October, 1849.

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between Montreal and St. Hyacinth, leaving each terminus alternately, until further notice.

Leaving St. Hyacinth at - -	7 am.
" " - -	3 pm.
Leaving Montreal at - - -	10 am.
" " - - -	6 pm.

THOMAS STEERS, *Secretary.*

May 31, 1849.

WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA, GA., TO CHATTANOOGA, TENN. 140 Miles.

PASSENGER SCHEDULE.

Leave Chattanooga daily, Sundays excepted, at	8½ a.m.
Arrive at Kingston . . .	by 12 m.
" Dalton . . .	by 3 p.m.
" Chattanooga . . .	by 6 "
Leave Chattanooga daily, Sundays excepted, at	7 a.m.
Arrive at Dalton . . .	by 9½ "
" Kingston . . .	by 12 m.
" Atlanta . . .	by 4 p.m.

The fare is now permanently reduced to *three* cents per mile for way as well as through Passengers; children and servants *two* cents per mile.

There are two Railroad routes from Atlanta to the Seaboard, viz: one by the Georgia Railroad to Augusta, and thence to Charleston by the South Carolina Railroad; the other by the Macon and Western Railroad to Macon, and thence to Savannah by the Central Railroad.

At Kingston, 60 miles north of Atlanta, the Rome Railroad branches off to Rome on the Coosa river, which admits of steamboat navigation as far down as Greensport in Ala. Mail stages are in operation from Rome leading towards Tuscaloosa, Ala., Columbus, Miss., Memphis, Tenn., etc.

At Dalton, 100 miles north of Atlanta, a line of stages branches off to Knoxville, Tenn., which will be superseded by the East Tennessee and Georgia Railroad as rapidly as the same is completed.

At Chattanooga a number of steamboats are in successful operation on the Tennessee river, and from that terminus of the road stages run to Nashville, which will be superseded by the Nashville and Chattanooga Railroad as rapidly as the same is completed.

WM. D. FULLTON, Supt. Transp.
Transportation W. & A. R. R., }
Atlanta, March, 1850. }

CAR MANUFACTORY
CINCINNATI, OHIO.

KECK & DAVENPORT WOULD RESPECTfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1849. 44tf

FOWLER M. RAY'S
METALLIC INDIA RUBBER CAR SPRINGS.

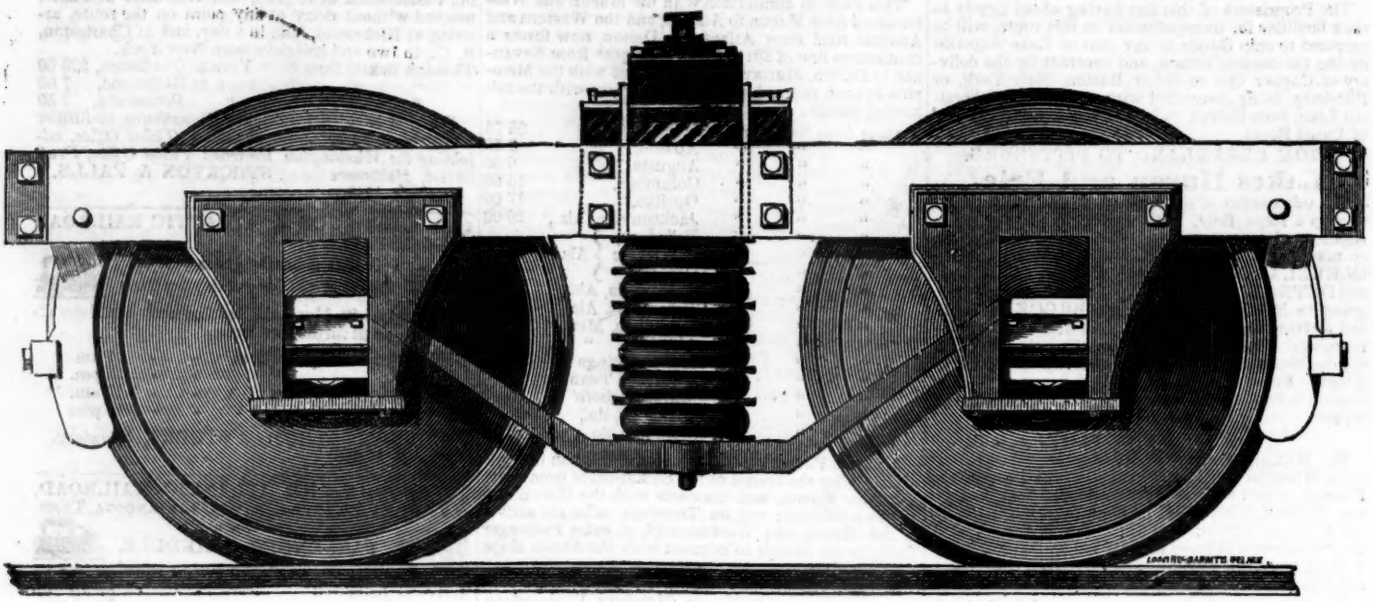


Fig. 1.

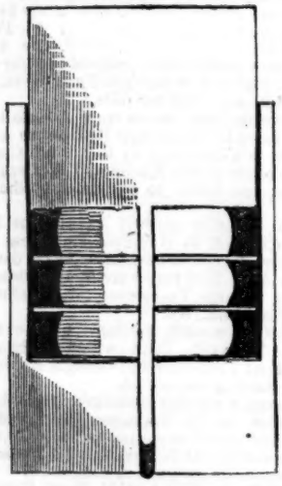


Fig. 2.

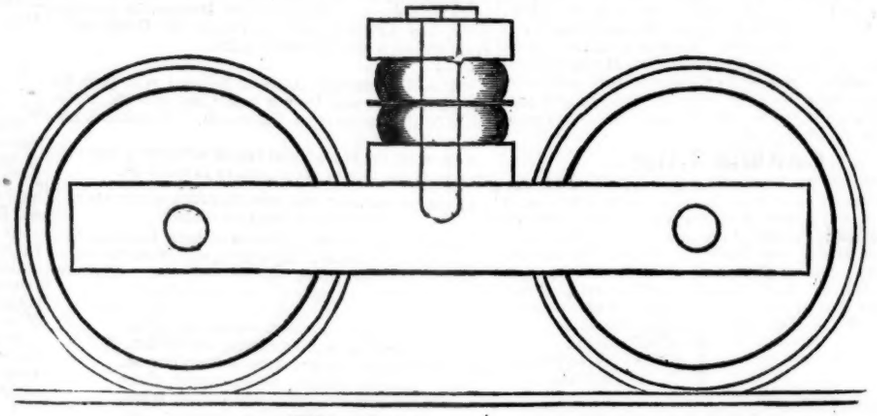
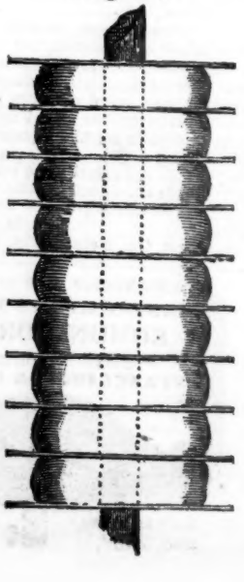


Fig. 3.



So much has been published for the purpose of misleading the public in regard to the inventorship of the India-rubber Railroad Spring, patented in the United States by Mr. W. C. Fuller, that the New England Car Company, proprietors of this invention, have deemed it proper, for the information of Railroad Companies, Car Builders and the public generally, to lay before them the facts upon which they found their claim to this invention, and to a Patent therefor.

Cut No. 1, Represents a cross section of the first model made by Mr. Tucker, under the direction of Mr. Ray, in the summer of 1844, and to which Mr. Tucker, Mr. Bradley and Mr. Bannester testify as being the model marked "B."

Cut No. 2, Represents the model made in 1845, to which Mr. Osgood Bradley and Gen. Thos. W. Harvey have testified.

Cut No. 3, Represents a rough sketch made by Mr. Ray in 1844, which he gave to a man about departing for England to take out some patents, who promised to write to Ray after his arrival in that country—which promise he has probably forgotten.

Mr. W. C. Fuller, of England, patented the above Spring in that country on the 23d October, 1845. He filed his enrollment April 23d, 1846, and on the 22d October, 1846, he took out a patent in the United States under the title, "For Improvement in Railway Carriages," when the improvement consisted in the spring, and not in the carriage.

The reader will perceive by the annexed testimony, that the India-rubber Railroad Car Spring was invented by Mr. Ray about two years previous to the date of Mr. Fuller's enrollment.

The Depositions are omitted for want of room, but will be published in full in the course of a few weeks.

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☞ LETTERS and COMMUNICATIONS to this Journal may be directed to the *Editor*,

HENRY V. POOR,
136 NASSAU STREET.